MAUI COUNTY DOWNHILL BICYCLE TOUR STUDY

JUNE 2010

Department of Public Works,
County of Maui

MAUI DOWNHILL BICYCLE TOUR STUDY

Prepared for

Department of Public Works
County of Maui

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June 2010

Contents

Page

1 Introduction
1.1 Study Purpose and Objectives 1-1
1.2 Enabling Legislation 1-1
1.3 Brief Overview of the Commercial Downhill Bicycle Tour Industry 1-2
1.4 Project Background: Key Events 1-4
1.5 Role of the National Park Service 1-6
1.6 Previous County Studies of Downhill Bicycle Tour Operators 1-7
1.6.1 Maui Police Department Study 1-7
1.6.2 Corporation Counsel Study 1-8
1.7 Upcountry Greenway Master Plan 1-9
1.8 Methodological Framework of this Study 1-11
1.9 Organization of this Report 1-11

2 Downhill Bicycle Tour Industry
2.1 Downhill Tour Operators 2-1
2.2 Downhill Tour Participants 2-1
2.3 Tour Operations 2-4
2.4 Rider Qualifications and Screening 2-6

3 Data Analysis and Findings
3.1 Tour Routes 3-1
3.2 Traffic Conditions on Key Roads 3-2
3.3 Bicycle Level of Service (BLOS)/Bicycle Compatibility Index (BCI) 3-8
3.4 Accident Analysis 3-9
3.4.1 NPS Accident Statistics 3-9
3.4.2 State of Hawaii, Department of Transportation Crash Data 3-13
3.4.3 State of Hawaii Department of Health 3-16
3.4.4 Emergency Medical Service 3-17
3.4.5 Self-Reported Industry Data 3-18

4 Community Input
4.1 Public Information Meetings 4-1
4.1.1 Public Meeting 1 4-1
4.1.2 Public Meeting 2 4-2
4.2 Stakeholder Meetings 4-7
4.2.1 Kula Community Association 4-7
4.2.2 Main Street Program 4-9
4.2.3 Maui Bicycle Alliance 4-10
4.2.4 Upcountry Citizens for Bike & Traffic Safety 4-10
4.2.5 Downhill Bicycle Tour Companies 4-10

Page

5 Regulatory Environment
5.1 Bicycle Tour Business Permit 5-1
5.2 National Park Service, Commercial Use Authorization 5-2
5.3 Motor Carrier Transportation Regulations under the Public Utilities Commission (PUC) 5-9
5.4 Traffic Laws: Bicycle Riding Regulations 5-10
5.5 Bicycle License and Tag 5-11
5.6 Complete Streets 5-11
5.7 Regulation of Businesses Similar to Commercial Bicycle Tours 5-12
5.7.1 Commercial Ocean Recreation Activity (CORA) Permit 5-12
5.7.2 Honolulu Pedicabs 5-13
5.8 Small Business Regulatory Review 5-14

6 Proposals
6.1 Physical Improvements 6-1
6.1.1 Staging Area(s) 6-1
6.1.2 Shoulder Widening and Pull-outs 6-2
6.1.3 Bridge Improvements 6-17
6.1.4 Bike Path Connector from Crater Road to Haleakala Hwy 6-18
6.1.5 Rest Stops and Scenic Overlooks 6-20
6.1.6 Baldwin Avenue Shared Use Path 6-21

6.2 Regulatory Proposals 6-21
6.2.1 Close Permit Loophole 6-21
6.2.2 Specify Restrictions and Conditions on Use of Roadways 6-22
6.2.2.1 Prohibit bicycle tours on certain road segments 6-22
6.2.2.2 Restrict bicycle tours during certain times of the day 6-24
6.2.2.3 Restrict the number of guided bicycle tours (convoys) allowed 6-24
6.2.2.4 Regulate the spacing of bike tour convoys 6-24
6.2.2.5 Restrict the size of convoys (number of riders per tour) 6-26
6.2.2.6 Regulate the qualifications of participants by age, height, weight, and/or skill level 6-27
6.2.2.7 Require the mandatory use of pull-outs by escort vans and trailers 6-27
6.2.2.8 Require speedometers on the cruise leader's bicycle 6-28
6.2.3 Develop a Credentialing and Oversight Program 6-29
6.2.4 Data Collection 6-30
6.2.5 Surcharge Fee per Bicycle 6-31
6.2.6 Mandatory Drug and Alcohol Testing 6-31

6.3 Non-Regulatory Proposals 6-32
6.3.1 Identify Vans and Trailers 6-32
6.3.2 Complaint Hotline and Follow-up 6-32

Page

6.3.3 Best Practices Manual 6-33
6.3.4 Safety Video 6-34
6.3.5 Scenic Byway 6-35
6.3.6 Directional Signs for Bicyclists 6-36
6.3.7 Increase Police Enforcement of Traffic Laws 6-36
6.3.8 Install Electronic Speed Monitors 6-36

7 Assessment and Recommendations
7.1 Assessment 7-1
7.2 Recommendations 7-4

8 References

Appendices

A. National Park Service, Commercial Use Authorization, Conditions, Special Conditions, Safety Plan Addendum, 2007
B. National Park Service, Case Incident Log 2006
C. National Park Service, Case Incident Log 2007
D. Kula Community Association, Bike Tour and Rental Safety Position Statement
E. Public Information Meeting 1, July 21 and 22, 2008
F. Public Information Meeting 2, November 19 and 20, 2008

List of Figures

		Page
1.	Location Map, Bike Tour Routes	1-5
2.	Upcountry Greenway Master Plan	1-10
3.	Traffic Counts, Haleakala Crater Road	3-4
4.	Traffic Counts, Haleakala Highway	3-5
5.	Traffic Counts, Baldwin Avenue	3-6
6.	Traffic Counts, Makawao Avenue	3-7
7.	Typical Plan—Pull-out Area	6-5
8.	Typical Section—80-foot ROW w/Cut, w/Fill	6-6
9a.	Potential Improvements (Mile 9-10)	6-7
9b.	Potential Improvements (Mile 6-8)	6-8
9c.	Potential Improvements (Mile 1-5)	6-9
9d.	Potential Improvements (Mile 1 to Lower Kimo Drive)	6-10
9e.	Potential Improvements (Mile 4-5)	6-11
9f.	Potential Improvements (Mile 3)	6-12
9g.	Potential Improvements (Mile 2)	6-13
9h.	Potential Improvements (Mile 1 to Hanamu Road)	6-14
9i.	Potential Improvements (Baldwin Avenue to Haliimaile Road)	6-15
9j.	Potential Improvements (Ohaoha Place to Ike Drive)	6-16
10.	Proposed Bike Path, Intersection of Haleakala Hwy and Crater Rd	6-19

List of Charts

1.	Downhill Bicycle Tour Participants, August 2007 and 2008	2-2
2.	Total Bike Accidents, Haleakala National Park, 1999-2006	3-10
3.	Bicycle Involved Crashes, Haleakala Crater Road, 1995-2006	3-13
4.	Comparison of Bicycle Involved Crashes and Other Vehicular Crashes, Haleakala Crater Road, 1995-2006	3-14
5.	Bicycle Involved Crashes, Haleakala Highway, 1995-2006	3-15
6.	Comparison of Bicycle Involved Crashes and Other Vehicular Crashes, Haleakala Highway, 1995-2006	3-16
7.	Bike Tour Accidents, 2007	3-18

List of Tables

1.	Downhill Bicycle Tour Participants, August 2007 and August 2008	2-3
2.	Tour Routes	3-1
3.	BLOS/BCI Calculations	3-9
4.	Vehicular Accidents by Zip Code, 2007	3-17
5.	Kula Community Survey, 2008	4-8
6.	Convoy Spacing Calculations (Scenarios)	6-25

1. Introduction

In 2008, the County of Maui contracted with Kimura International, Inc. to conduct a study of commercial bicycle tours that traverse down the slope of Haleakala. The study was motivated by strong public concern about the safety of tour operations and disruptions to local traffic. A statute enacted by the 2007 State legislature allows counties to regulate commercial bicycle tours, thereby providing the legal basis for changes to the Maui County Code.

1.1 Study Purpose and Objectives

Specific study objectives included the following:

- Describe the downhill bicycle tour industry
- Conduct an assessment of the downhill bicycle tour industry with input from tour operators, stakeholder organizations, community members, and public agencies
- Investigate alternatives and develop recommendations for possible regulation of commercial bicycle tours (both guided and unguided) on State and County roadways

1.2 Enabling Legislation

The legislation enacted in 2007 provided for the following:

[§46-16.3] Regulation of commercial bicycle tours. Any law to the contrary notwithstanding, the council of any county may adopt and provide for the enforcement of ordinances regulating commercial bicycle tours *on state and county highways*, including but not limited to ordinances relating to the number of tours, the number of bicycles within a tour, scheduling of tours, physical spacing of tours, rules of the road, health and safety requirements, equipment maintenance, driver and guide qualifications, driver and guide drug testing, accident procedures and reporting, and financial responsibility requirements. Each county shall follow federal guidelines for commercial bicycle tours that begin from federal or state parks and continue on to state highways.

For the purposes of this section:
"Bicycle tour" includes *both guided bicycle tours and unguided bicycle rental operations*.

1.3 Brief Overview of the Commercial Downhill Bicycle Tour Industry

According to industry lore, the first commercial bicycle tour down Haleakala took place in 1983. The original concept for the tour was to supply riders with bicycles and safety gear for a "gravity assisted bicycle adventure." Because the route is largely downhill, the ride does not require significant physical exertion and is more accessible to a wide range of bicycle riders. At the same time, the route has high aesthetic values, passing through some of the most scenic landscapes on the island.

There are two types of bicycle tours: escorted (or guided) tours, and independent (or unescorted) tours. Escorted tours have a maximum of 13 riders in a convoy led by a professional guide or cruise leader. The convoy is accompanied by a van, often hitched with an equipment trailer. In contrast, independent tours outfit the riders (bicycles, safety gear, maps and instructions) and ferry them to the start point, but riders come down on their own and at their own pace.

Escorted bicycle tour group descending Crater Road

At present there are seven companies, a relatively stable number that has not changed since the National Park Service decided to prohibit commercial bicycle tours within Haleakala National Park. These companies have experienced a relatively tumultuous period in the industry beginning with limited access to the national park and the ongoing economic recession. Of the seven companies, five operate escorted tours, while two are independent operators. The seven companies vary by size and the number of tours they run.

All of the bicycle tour operators use Crater Road (State Route 378) and Haleakala Highway (State Route 377), see Figure 1. The main tour route leaves the State highway at Kealaloa Avenue and tour operations become more differentiated once they hit County roads. Tours are conducted 365 days of the year, passing through the communities of Kula, Makawao, and Paia.

See Chapter 2 for a more detailed description of the bicycle tour industry.

Haleakala Highway, looking toward Haleakala

Escorted tour group on Hanamu Road; independent bicyclist in blue

1.4 Project Background: Key Events

Timeline describing key events in the regulatory history of the downhill bike tours.

1995	Ordinance 2426 establishes permit requirement for bike tour businesses
Nov 2005 Mar 2006 Nov 2006	Council Public Works Committee holds public hearings related to downhill bicycle tours Recommends passage of bill to increase insurance requirements
Feb 2007	Mayor Charmaine Tavares signs Ordinance 3435, increasing liability insurance requirement from $1 million to $3 million
Jun 2007	State legislature passes bill giving Counties power to regulate bike tour operators
Sep 2007	Bike tour client killed inside Haleakala National Park, culminating a 12-month period with 2 fatalities and 3 other serious accidents
Oct 2007	NPS imposes stand down (60 days)
Feb 2008 Mar 2008	NPS releases Safety Analysis Report NPS extends moratorium until a Commercial Services Plan is completed
May 2008	Maui County study begins

0 1 2 3

NORTH SCALE IN MILES

Figure 1

Location Map, Bike Tour Routes

1.5 Role of the National Park Service

Haleakala National Park, under the jurisdiction of the U.S. National Park Service (NPS), is one of Maui's premier visitor attractions. Virtually all of the Haleakala bicycle tours include a visit to the national park. Prior to the October 2007 safety stand down, the escorted bicycle tours originated at the Visitor Center near the summit. After commercial bicycle tours were stopped inside the park, the tour operators modified their programs—combining a bus tour within the park followed by the downhill bicycle ride which starts outside the park boundaries at an elevation of 6,500 feet. There are two main staging areas off Crater Road (State Route 378).

In the past, the NPS played a significant role in the way the bicycle tours were conducted. The Commercial Use Authorization (CUA) for bicycle tours carried general conditions, special conditions, and a Special Operations and Safety Plan Addendum for Bike Tours, providing guidelines, rules and practices to mitigate and manage risk. These attachments to the CUA may be found in the appendices to this report. To ensure compliance with the CUA conditions, park rangers regularly inspected and monitored bike tour operations.

The State law enabling regulation of commercial bicycle tours recognizes the importance of the national park. §46-16.3, Hawaii Revised Statutes, states that counties shall follow federal guidelines for commercial bicycle tours that begin from federal or state parks and continue on to state highways. The NPS is currently in the process of developing a Commercial Services Plan for Haleakala National Park. This study report was deferred in anticipation of the draft plan, originally scheduled for release in spring 2009. However, the plan's timetable has been delayed for various reasons. Maui County has decided to proceed with this study of the downhill bicycle tours, but will continue to coordinate with NPS, as appropriate.

Haleakala National Park entrance

1.6 Previous County Studies of Downhill Bicycle Tour Operators

The County ordinance requiring permits for bike tour businesses originally passed in 1995. In 2005, Council hearings began for more stringent regulation of the bike tours, beginning with a higher insurance requirement. In the ten years between 1995 and 2005, the number of tour participants increased as tourism on Maui flourished. At the same time, Upcountry residents and traffic levels were also increasing.

Two studies were prepared to help the community and Councilmembers understand growing tensions between residents and bicycle tours on Upcountry roadways: a study by the Maui Police Department in 2006 and a study by the Corporation Counsel in 2007.

1.6.1 Maui Police Department Study

A report by Maui Police Officer Jeffrey Mahoney, Traffic Section, regarding the Haleakala downhill bicycle tours was transmitted by letter dated June 26, 2006 from Thomas M. Phillips, Chief of Police to Joseph Pontanilla, Chair, Public Works and Transportation Committee, Maui County Council

Observations

Officer Mahoney made the following observations:

> Roadway is newly paved along the uppermost portions of Crater Road (378) down to almost Mile Post Marker #2. The roadway along the uppermost portion of Crater Road consists of many curves with short straightaways. Shoulder areas are quite narrow and there are not many locations that these tour groups may use as turnouts when traffic builds up behind the groups.
>
> As the route traverses down Crater Road, it runs into Haleakala Highway (377) where all the groups turn right at this main intersection. There is a posted stop sight for downhill traffic. Observation at this intersection found that most vehicular traffic slowed down but failed to stop at the posted stop sign. All of the bicycle tour groups utilized the shoulder but also did not stop at this intersection.
>
> Continuing down Haleakala Highway (377) the roadway again consists of many curves and longer stretches of straightaways. Just as the upper portion, this mid portion has few turnouts for groups to pull over to allow building traffic to pass. This results in some motorists trying to pass the groups along the longer straightaways, some over double solid yellow center lines.
>
> Speed limits along most of the upper and mid portion of the route is posted at 30 mph with even lower speed warning signs at many of the curves in the road. Bike tours seem to be below or near the speed limit consistently. Cannot say the same

for motor vehicle traffic along these same portions. Motor vehicle speeds average 8 to 15 mph over the posted speed limits.

Summary and Recommendations

1. Limit the number of tour operations allowed through the permit process

2. Set rider requirements; number of riders per tour to a maximum of 12, establish a minimum age limit of 16 and impose stricter requirements on the physical ability to perform this activity.

3. Establish a system of reporting incidents, such as injuries, accidents and complaints associated with this activity to further evaluate the current system.

4. Bicycles should be equipped with lights and reflectors due to the changing lighting and weather conditions associated with the mountainous terrain.

5. Tour groups should not be allowed to ride in sight of one another. This should minimize the build up of traffic and allow individual groups to utilize turnouts.

6. Require the trail vans to drive with lights on, have proper signage on vans indicating type of activity ahead, and follow no closer than one half mile behind the group. Instead of a trail van, supplement with a trail guide behind the last rider of the group. Two way communications can alert guides to approaching vehicles and because of the distance, allow bicycles time to get off of the road.

7. Law enforcement will be present, as needed, and continued violations by one company should face some type of penalties from a suspension up to revocation of their permit.

8. An assessment of the current roadways being utilized for this activity and the effect on traffic should be conducted. Liability and potential litigation concerns resulting from this assessment must also be considered.

1.6.2 Corporation Counsel Study

By letter report to the County Council dated January 18, 2007, the Corporation Counsel submitted a review of potential liability based on court records and other public documents of lawsuits against bicycle tour business operators. The review included 16 lawsuits involving commercial bicycle tours filed between 1999 and 2006.

The County of Maui has been named as a defendant in at least one bicycle tour business-related accident involving a $15 million claim for damages. In the case involving the County, the plaintiff allegedly crossed over the center line on Baldwin Avenue and collided with an oncoming vehicle during the bike tour. As a result of her injuries, the

plaintiff was left a paraplegic. The County did not make any payment in settlement of the case.

Lawsuits involving the alleged defective maintenance or design of County highways have the potential of exposing the County to greater liability for damages due to the law on joint and several liability[1] for joint tortfeasors (parties committing the tort). While State statutes provide Counties with certain protections from liability arising from recreational activities on beaches or public lands, they do not provide such protections for activities on highways.

1.7 Upcountry Greenway Master Plan

In July 2004, the County of Maui, Department of Planning, issued the *Upcountry Greenway Master Plan*.

The plan began by noting that "Upcountry" identifies and reflects a geographic location comprised of close-knit communities that place a high value on open space and rural characteristics. Greenways—defined as linear open spaces that provide routes for non-motorized travel and recreation—were proposed as a means of connecting places within and between communities, contributing to the economic and social integration of the Upcountry region. The following goal provided the foundation for the plan:

Goal An integrated system of non-motorized transportation and recreation multi-use routes, trails and paths, which respect the rights of private property owners and utility service companies, and which are compatible with existing and future land uses in the region.

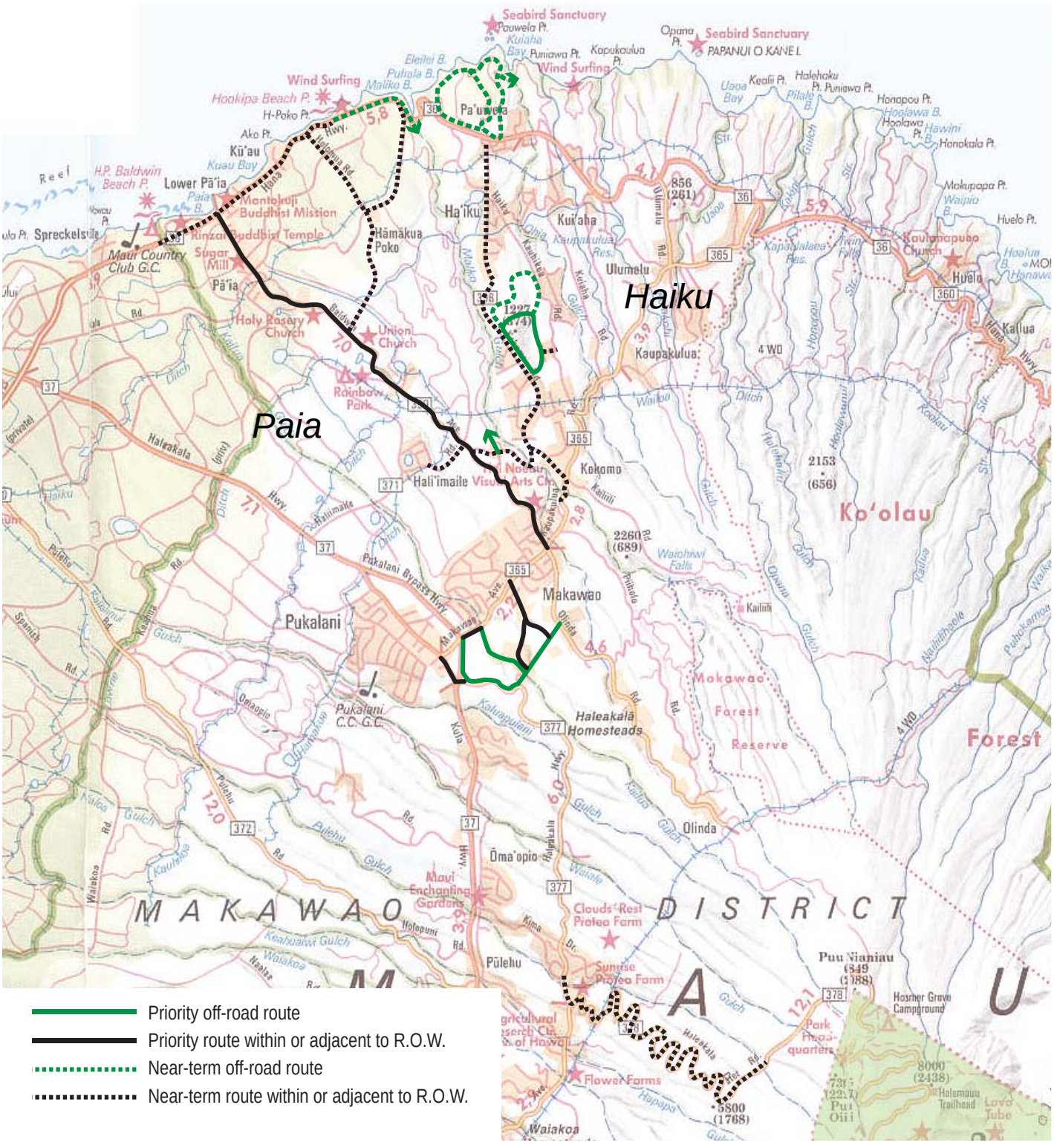
Of all the regions of Maui, a greenway plan was developed first for Upcountry communities with the intent that it serve as a prototype for similar plans throughout the island. In other words, Upcountry was viewed as being particularly appropriate and hospitable to facilities that promote alternative transportation and outdoor recreation. The proposed greenways themselves are a mix of off-road routes (paths and trails) and routes within or adjacent to the right-of-way. Proposed routes in the bicycle tour area are shown in Figure 2. Proposals within the bicycle tour area include the following:

- Kealaloa Avenue—Priority Route within or adjacent to right-of-way
- Hanamu Road—Priority Off-road Route
- Baldwin Avenue—Priority Route within or adjacent to right-of-way

[1] Under joint and several liability, a claimant may pursue an obligation against any one party as if they were jointly liable and it becomes the responsibility of the defendants to sort out their respective proportions of liability and payment. This means that a plaintiff may recover all the damages from any of the defendants regardless of their individual share of the liability. That defendant must then pursue the others for a contribution to their share of the liability.

MAUI DOWNHILL BICYCLE TOUR STUDY

Department of Public Works, County of Maui



Source: County of Maui, Dept. of Planning, July 2004

Figure 2

Upcountry Greenway Masterplan

1.8 Methodological Framework of this Study

This study is based on the collection and assessment of data from many sources in an effort to put together a comprehensive and accurate picture of the commercial downhill tour operations and their impacts on public roadways and Upcountry communities. Quantitative information and qualitative information are used in equal measure. Quantitative information consists of traffic data, accident data, and counts of tour groups and participants. These types of information help to gauge the size and intensity of use, and changes that have occurred over time.

Qualitative information includes the knowledge, opinions, and insights of people with first-hand experience of the commercial downhill tours. In one-on-one meetings, small groups, and large public forums, the study team learned about the industry and heard the many sides to the downhill bicycling story, each contributing to the overall narrative.

Because the activity has been going on for over 25 years, many ideas for how it can be improved have already been formulated. Some of these have been implemented, some tried part way, others are only now emerging. This study seeks to identify the most effective and feasible of the proposals and foster their consideration in a systematic way.

1.9 Organization of this Report

The chapters in this report are organized as follows:

1. Background information and methodological framework
2. Description of the downhill bicycle tour industry
3. Analysis of traffic and safety data
4. Community input
5. Regulatory environment
6. Study proposals
7. Assessment and recommendations
8. References

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2. Downhill Bicycle Tour Industry

This chapter describes the downhill bicycle tour industry. Information about the bicycle tours was obtained from several sources, including a survey of tour operators, in-person interviews, and company literature obtained from tour operators and online. Additional data was obtained from the National Park Service.

2.1 Downhill Tour Operators

As of 2009, there were seven downhill tour operators. Five companies primarily offer guided or escorted tours: Bike It Maui, Cruiser Phil's, Maui Downhill, Maui Mountain Cruisers, and Mountain Riders. Two companies offer independent or unescorted tours: Haleakala Bike Company and Maui Sunriders. Based on information compiled by the National Park Service for the years from 1999 to 2007, the number of companies operating in the park has remained relatively constant[1]. Only one company, Emerald Island Bicycle Tours, ceased operations in 2004, before the current stand down. The existing tour operators represent a stable group with continuity of ownership and many years of experience.

2.2 Downhill Tour Participants

To determine the number of downhill bicycle tour participants, Kimura International conducted a survey of downhill tour operators. The seven companies were asked to provide information about the number of tour participants for the months of August 2007 (before the NPS safety stand down) and August 2008 (after the stand down). August was selected as a representative month which captured the summer tourism season. Six of the seven companies provided data on both the number of vans and riders. The survey data were compared against information supplied by the NPS. The NPS data was also used to estimate participant numbers for the downhill tour operator with missing survey data.

As seen in Chart 1 and Table 1, the NPS stand down has brought about a significant change in the downhill bicycle tour industry.

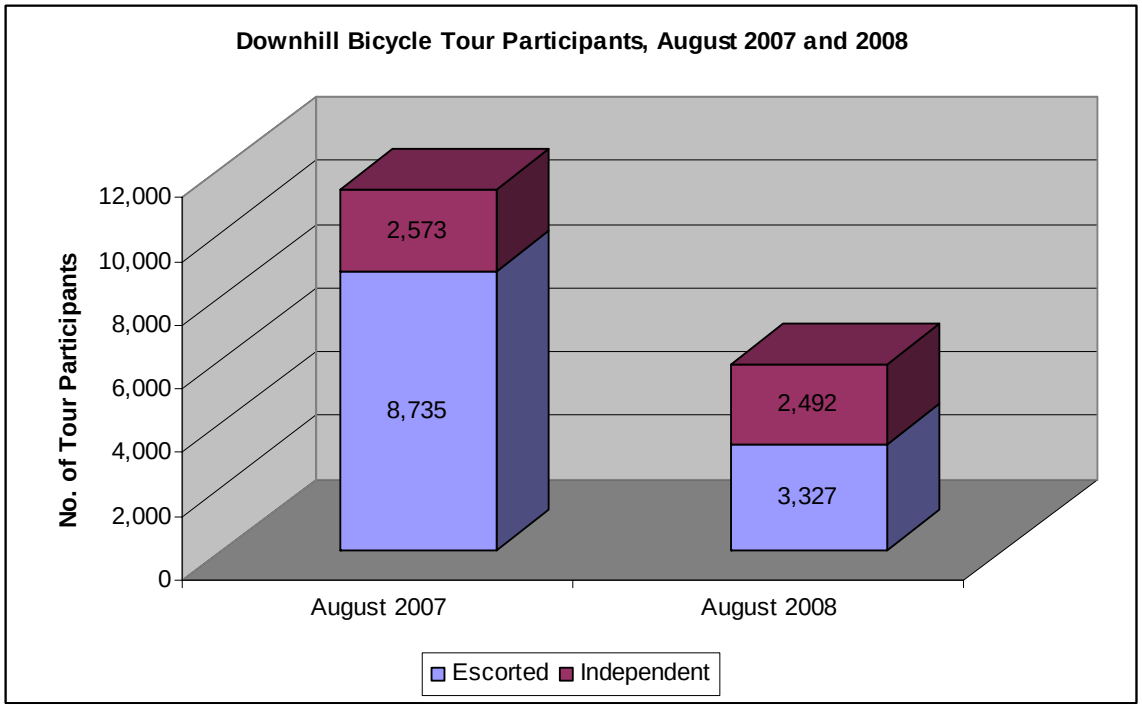
- Between August 2007 and August 2008, the total number of downhill bike tour participants dropped by 49% from 11,803 for the month of August in 2007 to 5,819 in the month of August in 2008.

[1] Haleakala National Park, U.S. Department of the Interior, Commercial Downhill Bicycle Tours Safety Stand-down Management Analysis, Volumes 1 through 10.

- Among the escorted tour operators, there was a slight reduction in the average number of riders per van, decreasing from 11.4 in 2007 to 10.7 in 2008.

- In August 2008, independent riders made up about 42.8% of all downhill bicyclists, compared to 22.8% in August 2007.

Chart 1



Tour operators have stated that the National Park component is important to the overall perception of the activity's value. Because many tourists have a limited number of days on the island, they are less likely to make multiple trips to Haleakala—once to visit the park and once to take the bicycle tour. In re-thinking the quality of the Haleakala National Park experience, the NPS not only barred the bicycle tours, but also reduced the number of permits granted to the bike companies to conduct bus tours of the park. In some cases, this meant a reduction at sunrise from five permits to two permits. The critical issue of future NPS policy regarding bus (and possibly bicycle) tour permits is expected to be addressed in the pending Commercial Services Plan. In the meantime, the cap on NPS bus tour permits coincides with a broader slowdown in tourism due to recessionary factors. When visitor activity increases, bicycle tour operators could make alternate arrangements, such as buying seats on a third-party bus tour that would deliver bicycle tour participants to the staging area after the park visit. Another option is to

eliminate the Haleakala park visit and market an abbreviated tour consisting of just the downhill ride.

Table 1. Downhill Bicycle Tour Participants, August 2007 and August 2008

	Escorted Tours		Independent Tours		Total Tours	
Vans	Monthly Total	Daily Average	Monthly Total	Daily Average	Monthly Total	Daily Average
August 2007	820	26	158	5	978	32
August 2008	320	10	173	6	493	16
Net Change, 2007-2008	-500	-16	15	0	-485	-16
Percent Change, 2007-2008	-61%	-61%	9%	9%	-50%	-50%
Riders	Monthly Total	Daily Average	Monthly Total	Daily Average	Monthly Total	Daily Average
August 2007	8,735	282	2,573	83	11,308	365
August 2008	3,327	107	2,492	80	5,819	188
Net Change, 2007-2008	-5409	-174	-81	-3	-5490	-177
Percent Change, 2007-2008	-62%	-62%	-3%	-3%	-49%	-49%

Note: Slight discrepancies due to rounding.

Source: Kimura International, 2008. Downhill Bicycle Tour Operator Survey. The NPS provided monthly totals for August based on the 2007 Annual Report and number of vouchers collected in 2007 and 2008.

Future Growth in the Downhill Bike Tour Industry

In one-on one interviews, the downhill bicycle tour operators expressed the following views about the future of the industry:

- Long-term economic viability is a concern given National Park uncertainties, tourism cutbacks, and general economic slump
- The most important factor affecting the future size of the industry is the NPS Commercial Services Plan and policy of issuing park permits
- The industry will not expand to former levels with most industry representatives saying it had gotten “too big” (prior to the NPS safety stand down)

2.3 Tour Operations

Check-in and Initial Briefing

All downhill bicycle tours begin with a tour orientation and safety briefing at the baseyard before leaving for Haleakala. At this time, participants are asked to read and sign a document variously termed acknowledgement of risk or release waiver. Some companies also require completion of a medical/physical clearance form. Because participants make reservations by telephone, online, or through a third-party booking agent, they should already be familiar with the company's policy on rider qualifications, but the baseyard briefing provides another opportunity to screen and counsel riders. The safety briefing is given verbally and is supplemented by written information. All companies provide lengthy and pointed lists of rules and cautions.

Guided or Escorted Tours

At the launch site, cruise leaders have the discretion to determine if weather conditions are too extreme. They may choose to start the tour at a lower elevation. If conditions are not satisfactory, tours are canceled and fees refunded.

Before mounting up, cruise leaders provide a final safety briefing and determine the order of the riders. The cruise leader rides first, followed by slower riders. All riders, however, are expected to travel at the cruise speeds specified in the company's literature, which range from 15 to 25 mph. Bicyclists are instructed to keep 20-30 feet of space between bicycles to allow adequate stopping room.

Final briefing before the bicycle descent begins

There are two types of maneuvers to allow vehicles to pass. In a rolling pass, the cruise leader signals all riders to slow down which enables spacing to tighten up to a bicycles' length. The shorter convoy, coupled with bicyclists riding in the shoulder, facilitates passing by vehicles. A second maneuver is the stop pass where riders turn off the road completely, stop, and allow traffic to pass. The cruise leader (at the front of the convoy) and van driver (at the rear) communicate by radio to assess tour progress and traffic conditions.

During the tour, the cruise leader makes several stops so that riders can take photos and refresh themselves. At any point, riders are permitted to ride in the van, instead of continuing on bike. Conversely, the cruise leader may direct riders exhibiting difficulties into the van to complete the tour.

Independent or Unescorted Tours

Two companies specialize in independent tours. Participants are provided with backpacks with the following: contact phone numbers, map and directions back to the baseyard, card with Hawaii Traffic Laws, card with the company's safety rules, and combination lock. Riders are also provisioned with helmet, rain gear, and gloves. Because cell phones are ubiquitous, riders are instructed to call the van driver if assistance is needed. In case of accident requiring medical attention, they are instructed to call 911 first, then the van driver or company office.

Following a van tour of the national park, riders are taken to the launch site where they begin the unescorted ride. Independent tour participants are given a window of time to complete the tour, during which they may stop and visit as desired.

Routing Concerns

Some sections of the tour route have elicited community concern, especially through more congested urban areas. Some companies have modified their ride to avoid passing through those sections. Current routing, according to information collected through the downhill tour operator's survey and conversations with the tour operators:

	Yes	No
Through Makawao Commercial District	4	3
Along Baldwin Avenue	5	2
Through Paia Commercial District (Baldwin and Hana Hwy)	1	6

A number of bicycle tours end at Holy Rosary Church on Baldwin Avenue

2.4 Rider Qualifications and Screening

Rider Qualifications

All of the bicycle tour companies have screening criteria for prospective riders, but restrictions vary.

Minimum age: 7 to 15 years
Maximum age: 65 years (one company only)
Minimum height: 4'10" to 5'0"
Maximum weight: 250 to 300 lbs (one company has no maximum)
Pregnancy: uniformly prohibited

Bicycling experience is the single most important qualification. But there are no consistent criteria, with "experience" is defined as:

- A competent rider with recent experience
- Person confident riding in traffic on public roads
- A good rider
- Bicycling experience within the last 24 months

3. Data Analysis and Findings

This chapter provides quantitative analyses of roadway and traffic conditions and accident levels. Data from various sources are used to put together the statistical picture.

3.1 Tour Routes

The bike tour route consists of State and County roads (see Figure 1). The following list shows the roadways used.

Table 2. Tour Routes

Roadway	Start and End Points	Approx. Distance (miles)
State Highways		
Haleakala Crater Road (378)	Launch Area to Haleakala Hwy	9.4
Haleakala Highway (377)	Crater Road to Kealaloa Rd	5.0
Hana Highway (36)	Baldwin Ave to Staging Area	0.2
County Roads		
Kealaloa Avenue	Haleakala Hwy to Hanamu Rd	0.4
Hanamu Road	Kealaloa Rd to Olinda Rd	0.8
Olinda Road	Hanamu Rd to Makawao Ave	1.0
Baldwin Avenue	Makawao Ave to Hana Hwy	7.0
Makawao Avenue and Kokomo Road (independent tour route)	Olinda Rd to Haiku Town	5.0

The full length of the escorted tour from the launch site at about Milepost 9.5 on Crater Road to the dismount site on Hana Hwy is approximately 23.8 miles. One escorted tour company limits its tour route to State roads, stopping near Milepost 2 on Haleakala Hwy.

Two tour operators make an interim stop, where riders dismount. Riders and equipment are loaded onto the van and trailer and driven through Makawao Town, also by-passing Hanamu Road and Olinda Road. Bicyclists re-mount and continue down Baldwin Avenue, ending the ride at Holy Rosary Church. Another guided tour operator occasionally ends at Holy Rosary Church, but the tour remains on bicycles through

Makawao Town. At one time almost all escorted tours ended at Paia Beach Park, which entailed riding through Paia Town and crossing Hana Highway. More recently, in response to complaints about bicycle convoys through town, the number of tours ending at Paia Beach Park has dropped significantly.

The independent bicycle tours generally follow the same route. One independent tour ends at a baseyard on Baldwin Avenue on the outskirts of Paia Town. The other independent tour operator is based in Haiku so bicyclists are instructed to turn right at the four-way stop in Makawao Town onto Makawao Avenue, then makai-bound onto Kokomo Road.

3.2 Traffic Conditions on Key Roads

The information below, and the corresponding figures, describe motor vehicle traffic conditions on key roads used by the downhill bicycle tours.

Haleakala Crater Road, (Route 378)
Nov. 2005, between Poni Moi Place and 4000 Foot Elevation sign at the1 MP sign
Figure 3

Total Daily Traffic 1,611 vehicles
AM Peak Hr (to National Park boundary) 8:00-9:00 AM, Volume 62 vehicles
AM Peak Hr (to Kekaulike Avenue-downhill) 7:15-8:15 AM, Volume 106 vehicles

- Downhill traffic volume is highest from 7:15 a.m. to 8:50 a.m.
- The peak rate, between 7:30 a.m. and 7:45 a.m., was 30 vehicles (rate of 120 vehicles per hour) or two vehicles per minute
- Volumes drop to less than half the peak, averaging about one vehicle per minute and continue at low volumes until the afternoon

Haleakala Highway, (Route 377)
Nov 2005, between Kula Highway and Kealaloa Road/1 MP sign
Figure 4

Total Daily Traffic 4,546 vehicles
AM Peak Hr (to eastern Makawao/Pukalani) 7:00-8:00 AM, Volume 297 vehicles
AM Peak Hr (to Kula Hwy/Kekaulike-downhill) 7:00-8:00 AM, Volume 401 vehicles

- This traffic count was taken below the one-lane bridge (below the Kealaloa Avenue junction where most bicyclists turn off)
- There is a significant drop in traffic volumes after 8:00 a.m.

Baldwin Avenue
Nov 2005, between Alexander and Kaluanui
Figure 5

Total Daily Traffic	3,984 vehicles
AM Peak Hr (to Kaluanui Road)	7:00-8:00 AM, 119 vehicles
AM Peak Hr (to Hana Hwy-downhill)	7:15-8:15 AM, 193 vehicles

- Peak hours are not as pronounced
- Downhill volume is higher through most of the day
- Downhill volume is between 1280 and 180 vehicles per hour (2 to 3 per minute) for most of the morning

Makawao Avenue
June 2005, between Makawao Urban Boundary and Kokomo Road
Figure 6

Total Daily Traffic	8,079 vehicles
AM Peak Hr (to Hana Hwy-downhill)	7:45-8:45 AM, Volume 240 vehicles
AM Peak Hr (to Old Haleakala Hwy)	7:00-8:00 AM, Volume 460 vehicles

- Except for the period from 7:45 a.m. to 8:00 a.m., downhill volume is about 4 vehicles per minute for most of the morning

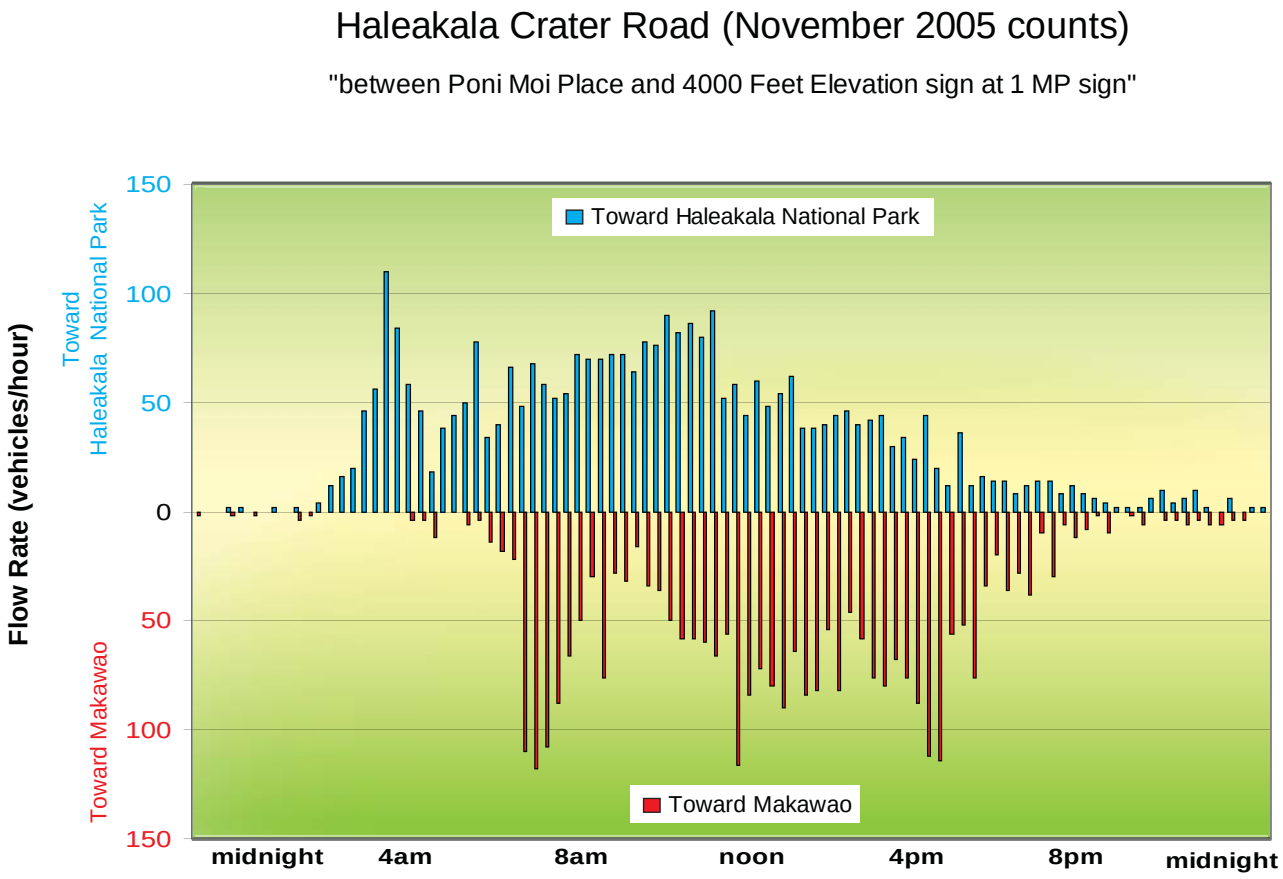


Figure 3

Traffic Counts, Haleakala Crater Road

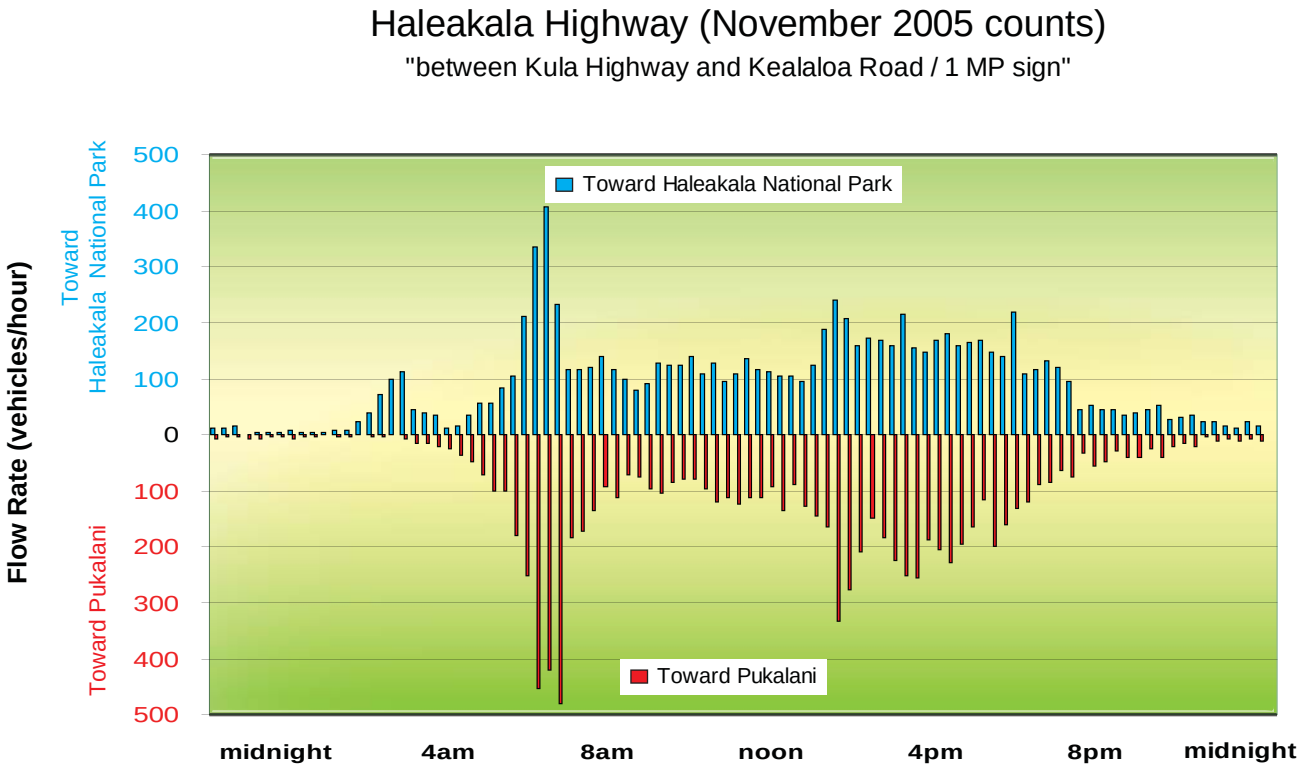


Figure 4

Traffic Counts, Haleakala Highway

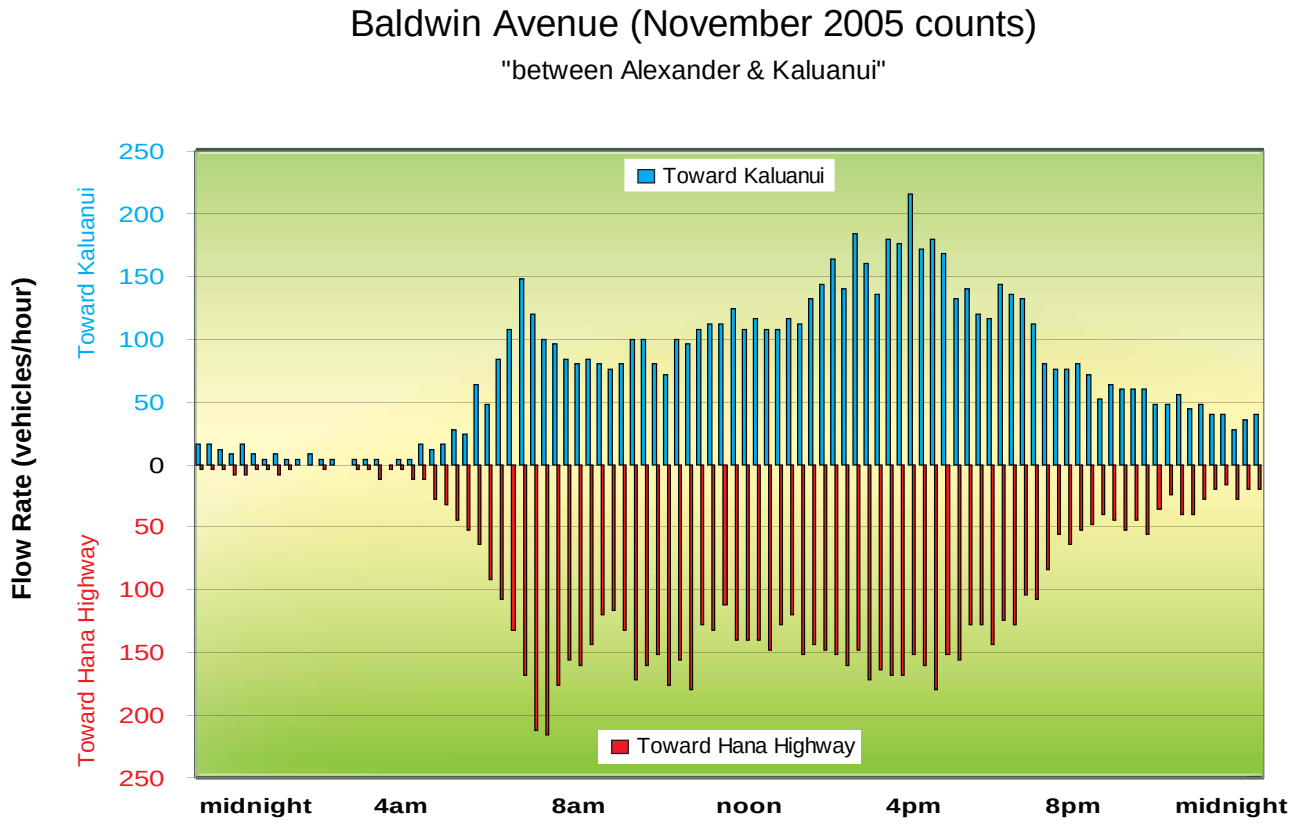


Figure 5
Traffic Counts, Baldwin Avenue

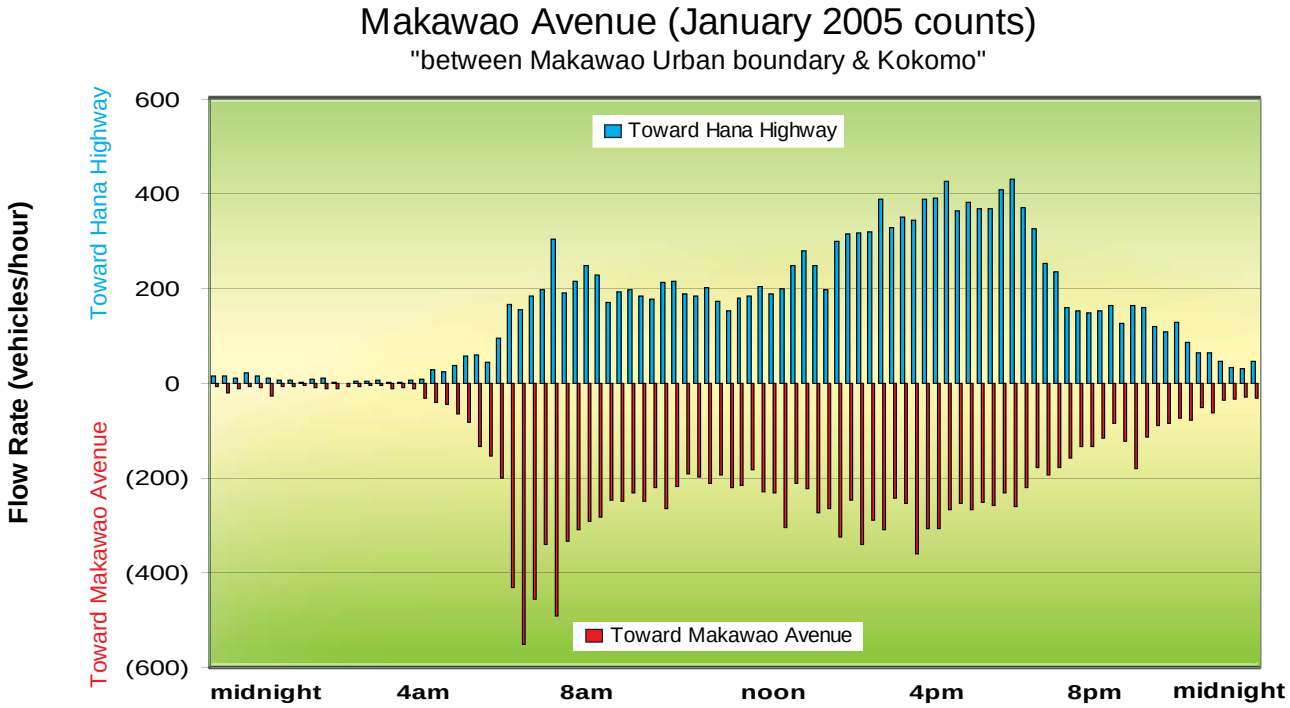


Figure 6

Traffic Counts, Makawao Avenue

3.3 Bicycle Level of Service (BLOS)/ Bicycle Compatibility Index (BCI)

To gauge the suitability of key roadways for use as bicycling facilities, the study team calculated the Bicycle Level of Service/Bicycle Compatibility Index. (BLOS/BCI). This methodology was developed by transportation engineers, in cooperation with the FHWA. The BLOS/BCI model numerically rates the "bikeability" of on-road bicycle facilities with data inputs in 10 fields:

- Through lanes per direction
- Width of outside lane
- Paved shoulder, bike lane, or marked parking area
- Bi-directional traffic volume (ADT)
- Posted speed limit
- Percentage of heavy vehicles
- FHWA's pavement condition rating
- Percentage of road segment with occupied on-street parking
- On-street parking time limit, in minutes
- Location in residential area

Bicycle Level of Service and Bicycle Compatibility Index are emerging as national standards for quantifying the bike-friendliness of a roadway. While other "level of service" indices relate to traffic capacity, these measures indicate bicyclist comfort level based on specific roadway geometries and traffic conditions. Roadways with a better (lower) score are more attractive (and usually safer) for bicyclists.

Data inputs for calculation of BLOS:

- Through lanes per direction
- Width of outside lane, to outside stripe
- Paved shoulder, bike lane, or marked parking area-outside lane strip to pavement edge
- Bi-directional traffic volume (average daily traffic)
- Posted speed limit
- Percentage of heavy vehicles
- FHWA's pavement condition rating
- Percentage of road segment with occupied on-street parking
- Percentage of segment with sidewalks
- Sidewalk width
- Sidewalk buffer/parking lane width
- Buffer/parking lane average tree spacing

Table 3. BLOS/BCI Calculations

	Score	Level of Service	Compatibility Level
Crater Road (378) between Poni Moi Place and 4000' Elevation			
BLOS	1.94	B (1.51-2.50)	Very High
BCI	1.65	B (1.51-2.30)	Very High
Haleakala Highway (377) in the vicinity of Kealaloa Road			
BLOS	2.28	B (1.51-2.50)	Very High
BCI	2.06	B (1.51-2.30)	Very High

The BLOS/BCI index reveals that the existing roadways are suitable for bicycling. The scores are influenced by relatively low traffic volumes and low posted speed limits. However, the BLOS/BCI does not account for bicycle riding in groups which results in a line of riders.

3.4 Accident Analysis

Analyses of accidents were conducted using data from five sources, with each source contributing to the overall record of accidents among downhill bicycle tour participants.

- National Park Service
- State of Hawaii, Department of Transportation
- State of Hawaii, Department of Health
- Emergency Medical Service, Kula
- Self-report by downhill bicycle tour operators

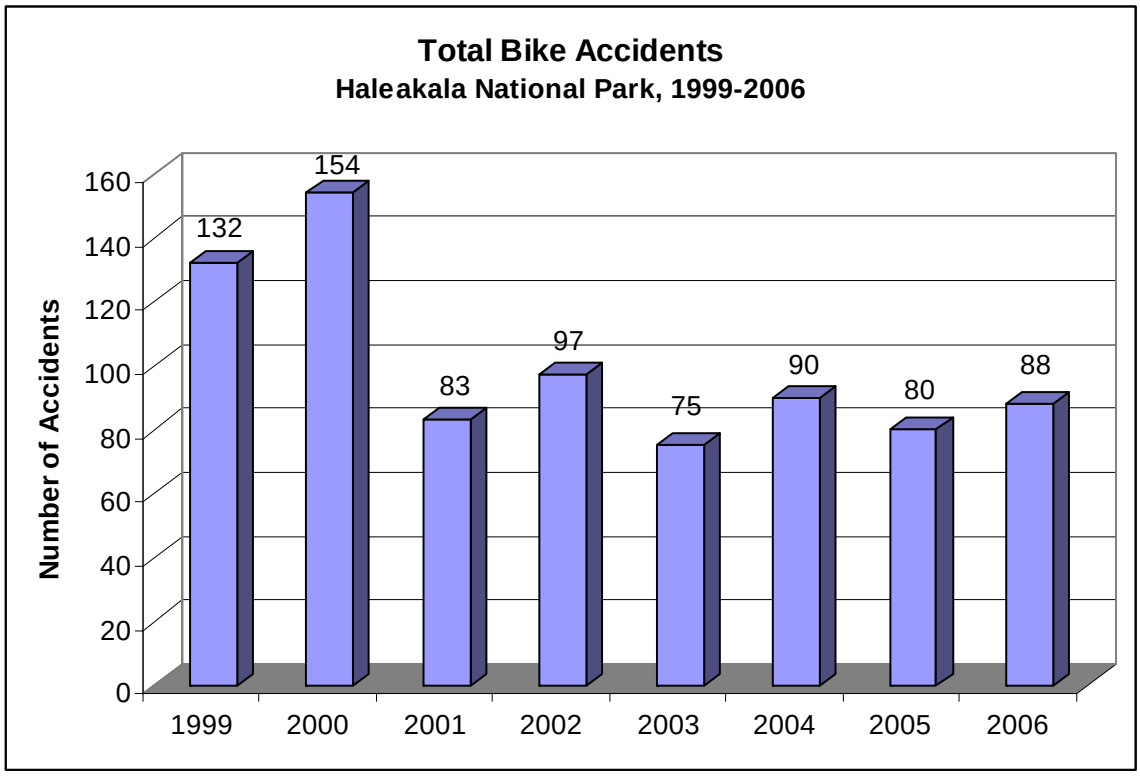
3.4.1 NPS Accident Statistics

In February 2008, the National Park Service published a Safety Analysis Report of commercially guided tours in Haleakala National Park. The following are key findings of the study

- For the period between 1999 and 2006, the injury rate was 8.5 injuries per 10,000 riders

- The injury rate declined after a comprehensive review in 1999 resulted in a Safety Action Improvement Plan that added conditions to the park permit. In the chart below, the drop in accidents is seen after 2000.

Chart 2



Source: National Park Service, Safety Analysis Report: Commercially Guided Tours in Haleakala National Park, February 28, 2007

NPS Case Log Data

In addition to the Safety Analysis Report, the National Park Service also released in 2007 a set of addenda that included annual data on the bicycle tours. The following information was taken from the NPS Incident Case Logs for 2006 (last full year before the safety stand down) and 2007 (data through October, when the stand down went into effect). According to the conditions of the Commercial Use Authorization, tour operators are required to report all accidents. The 2006 and 2007 logs are reproduced in Appendices B and C. They have been retyped and sorted by case number, but otherwise duplicate the NPS document with no substantive change.

When the October 2007 safety stand down began, NPS authorizations allowed for a maximum of 40 guided tours per day or as many as 90,000 participants per year.

2006 NPS Incident Case Log

Accidents

- 103 incidents were reported in the Case Incident Log
- 86 of the 103 incidents (83.5%) were accidents, including 1 fatality
- 2 of the 86 (2.3%) accidents involved MEDEVAC
- 2 of the 86 (2.3%) accidents involved EMS ground transport; 7 (8.1%) involved POV or other form of transport;
- 3 other accidents is likely to have required transport (broken bones or sprains)
- 50 of the 86 (58.1%) accidents listed as "minor injury"
- 13 of the 86 (15.1%) accidents listed as "no injury"
- 8 of the 86 (9.3%) accidents provided no detail

Descriptions of the more serious injuries included loss of consciousness, broken bones, neck/shoulder injuries, internal injuries

- Breakdown of accidents by gender: 51 female (59.3%), 26 male (30.2%), and 9 gender unknown (10.5%)
- Age range: 12-83; 5 persons were 16 years or younger
- Breakdown of transport cases by age: 1 < 16; 3 in 20s; 2 in 30s; 2 in 40s; 2 in 60s; 1 unknown age
- 1 fatality involved a 60-year old male rider

Non-Accidents

- 10 of 103 incidents (9.7%) were citations
- of 103 incidents (3.9%) were vehicular warnings
- 1 multi-vehicle accident (minor damage)

2007 NPS Incident Case Log

Accidents

- 147 incidents reported in the Case Incident Log
- NPS stand down barring bicycle tours began October 2007.
- 77 of the 147 incidents (52.4%) were accidents, including 1 fatality
- 2 of the 77 (2.3%) accidents involved MEDEVAC
- 8 of the 77 (10.4%) accidents involved EMS ground transport; 11 (14.3%) involved POV or other form of transport
- 49 of the 77 (63.6%) accidents listed as "minor injury"

- 7 of the 77 (9.1%) accidents listed as "no injury"
- 7 of the 77 (9.1%) accidents provided no detail

Descriptions of more serious injuries included fractures, back pain, head injuries, and sprains

- Breakdown of accidents by gender: 54 female (70.1%), 17 male (22.1%), and 6 gender unknown (7.8%)
- Age range: 12-78; 4 persons were 16 years or younger
- Breakdown of transport cases by age: 2 in 20s; 4 in 30s; 3 in 40s; 10 in 50s; 2 unknown age
- 1 fatality involved a 53-year old female rider

Non-Accidents

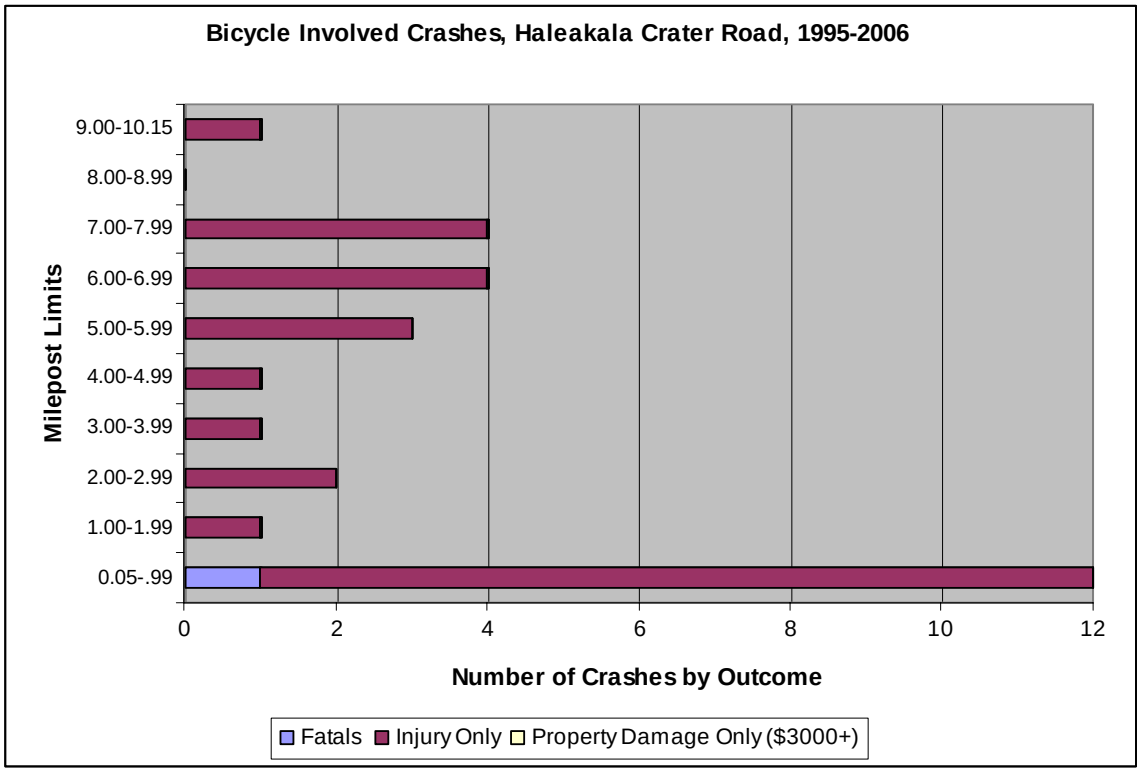
- 59 of 147 incidents (40.1%) were citations
- of 147 incidents (3.4%) were vehicular warnings
- of 147 incidents (3.4%) were safety inspections
- 1 multi-vehicle accident (collision)

3.4.2 State of Hawaii, Department of Transportation Crash Data

The Hawaii Department of Transportation (HDOT) compiles information about accidents (termed crashes) on State highways. In terms of analyzing bicycle accidents, the HDOT database is restricted because the data are limited to roadways under State jurisdiction and crashes must involve a motor vehicle; bicycle-only crashes are excluded. Furthermore, HDOT does not release geographically specific data.

The charts below show data aggregated over a 12-year period—from 1995 to 2006.

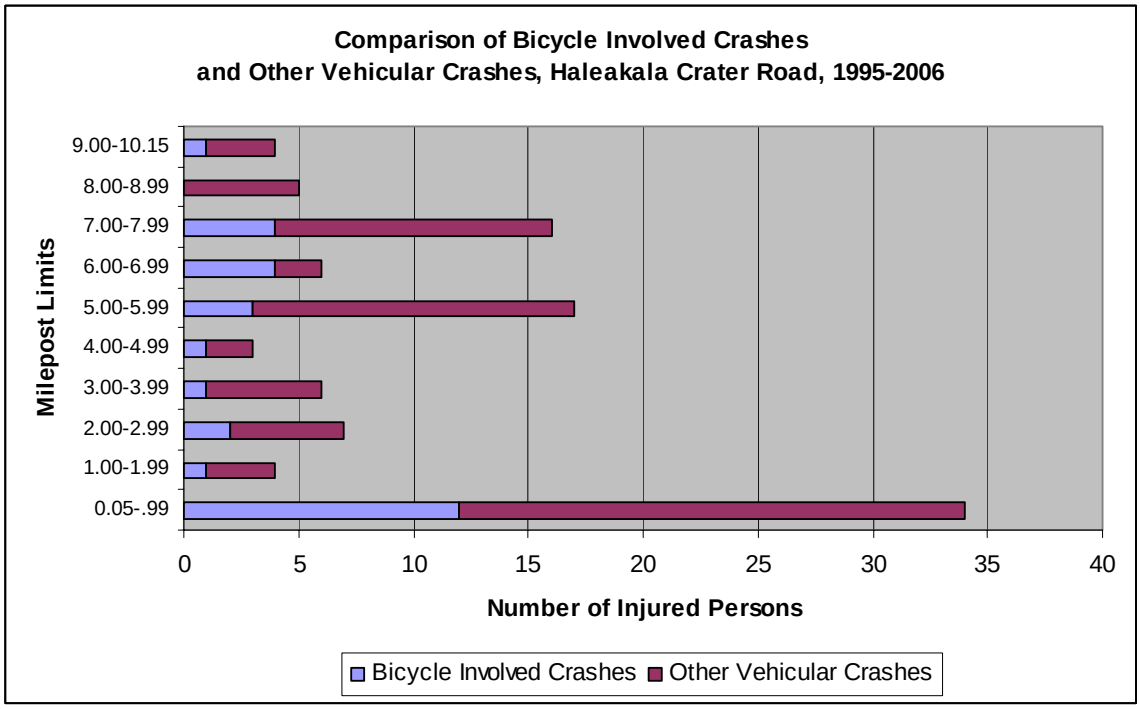
Chart 3



Source: State of Hawaii, Department of Transportation

- During the 12 years between 1995 and 2006, there were 29 crashes on Crater Road involving a bicycle, including one fatality
- By far, the largest concentration of crashes occurred in the first mile of Crater Road, located in the lower part of the mountain where the predominant land use is residential and the potential for conflicts between bicycles and automobile increases.

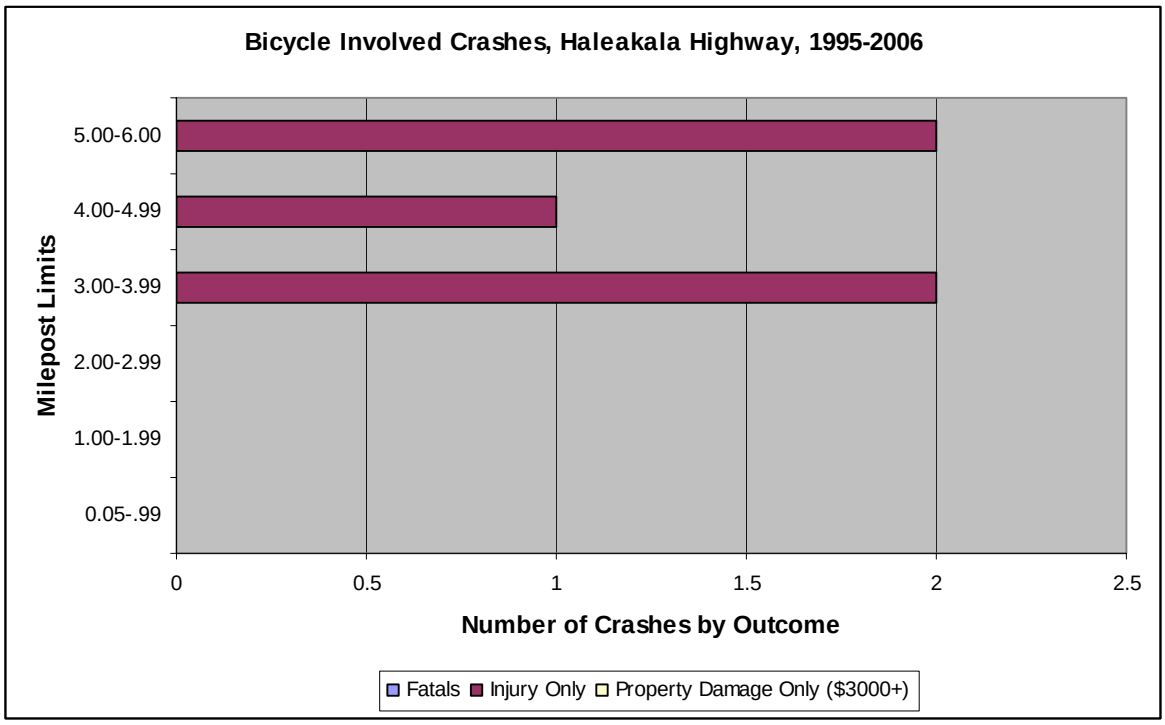
Chart 4



Source: State of Hawaii, Department of Transportation

- Over the same period, there were 102 total crashes on Crater Road. The 29 bike-involved crashes amounted to 28.4% of all vehicular crashes.
- Motor-vehicle only crashes outnumbered bike-involved crashes on all sections of Crater Road except for the stretch between MP 6.00-6.99.

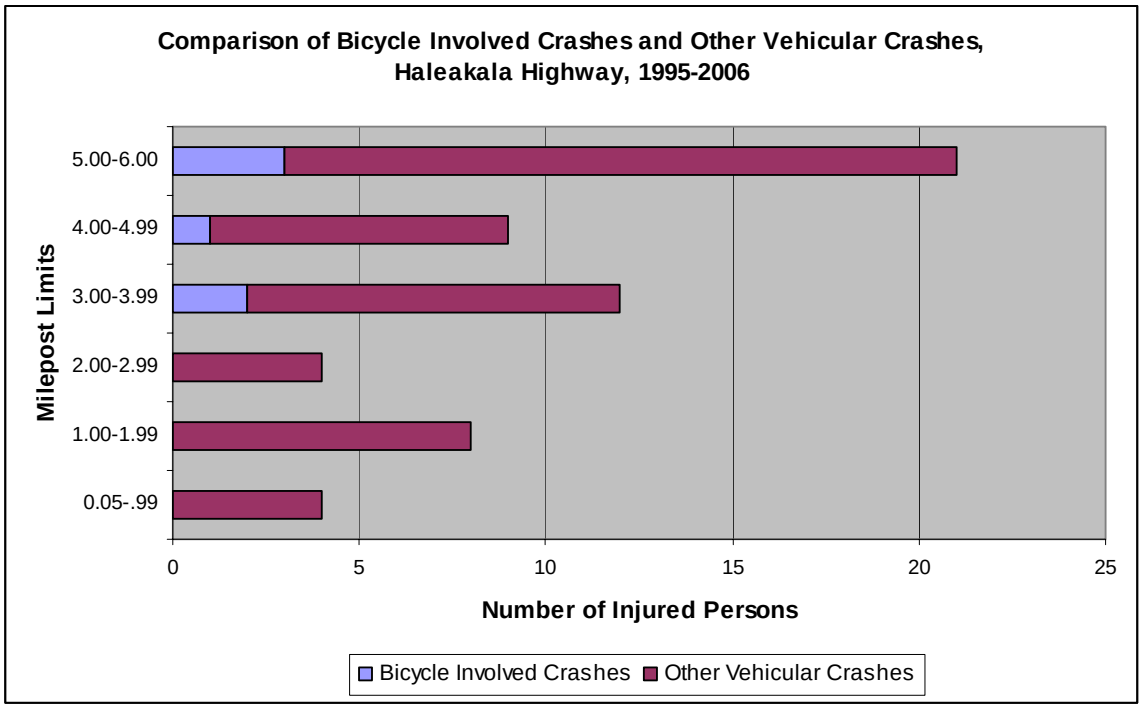
Chart 5



Source: State of Hawaii, Department of Transportation

- In the 12 years between 1995 and 2006, there were 5 bicycle-involved crashes on Haleakala Highway.
- 2 crashes occurred in the more populous section between Lower Kimo Drive and Crater Road.

Chart 6



Source: State of Hawaii, Department of Transportation

- Bicycle-involved crashes accounted for 8.6% of all crashes on Haleakala Highway.
- In comparison to Crater Road, crashes on Haleakala Highway are more likely to involve motor vehicles.

3.4.3 State of Hawaii Department of Health

The State of Hawaii, Department of Health (DOH), Emergency Medical Service (EMS) and Injury Prevention System was asked to provide data on bicycle accidents in particular and vehicular accidents in general.

Table 1 shows a breakdown of bicycle and vehicular accidents by zip code area. Data was also requested for the Island of Hawaii because of the similarity in overall population.

Table 4. Vehicular Accidents by Zip Code, 2007

Selected Zip Codes/ Island Total	All Vehicular Accidents	Non-Bicycle Accidents	Bicycle-Involved Accidents
96790	50	30	20
96768	64	51	13
96799	1	1	0
96708	41	41	0
Island of Maui	1,000	870	130
Island of Hawaii	1,622	1,550	72

96790 = Kula 96768 = Makawao/Pukalani 96799 = Paia 96708 = Haiku

According to the DOH data, a relatively high proportion of bicycle accidents occurred in the Kula zip code, where 40% of vehicular accidents in 2007 were bicycle-related. In comparison, although there were more vehicular accidents overall in the Makawao/ Pukalani zip code, but only 20% of them were bicycle-related. For the island of Maui, 13% of all vehicular accidents were bicycle-related.

Even more striking is the comparison with Hawaii Island, which had 50% more vehicular accidents than Maui—1,622 on the Big Island compared to 1,000 on Maui. But only about half the number (55%) of bicycle accidents—72 on the Big Island compared to 130 on Maui. Overall, bicycle-related accidents accounted for only 4.4% of total vehicular accidents on the Big Island (compared to Maui's 13%). Statewide, 5.4% of all vehicular crashes are bicycle-related.

3.4.4 Emergency Medical Service

Candy Lam, EMS Supervisor with the Med 11 Unit in Kula provided data for bicycle accidents occurring in 2007. The detailed data included location information for most of the cases. Whether the accidents involved commercial bike tour members (and not other bicyclists) could not be confirmed.

The EMS database for 2007 included 32 accidents. Two accidents that took place on Kula Highway were disregarded since commercial bike tours do not travel on that road. Of the remaining 30 accidents, 19 of them—comprising a significant 63.3%—occurred on Crater Road. Of the 19 Crater Road accidents, 7 took place within the National Park, 9 took place on the State highway portion, and the location of 3 was unknown, but most likely took place on the State highway as well. An additional 5 accidents took place on Haleakala Highway, also under State jurisdiction. A relatively small number—3 accidents—took place on County roads. The locations of three accidents were unknown.

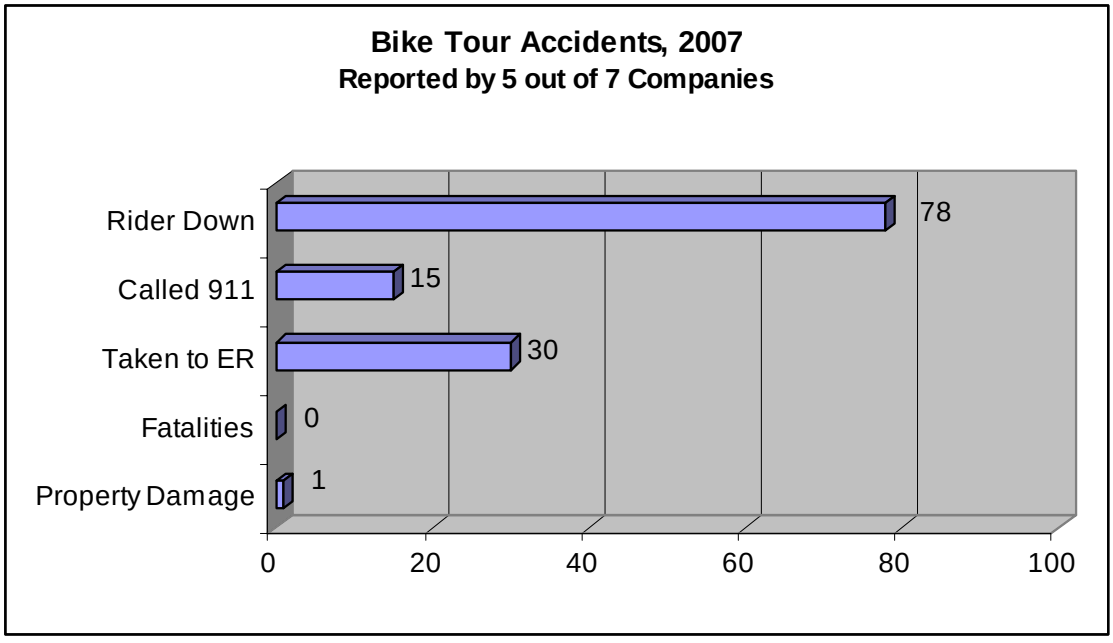
Consistent with the NPS Case Incident Log, a large majority of people involved in accidents were women: 25 out of 30 (83%). The NPS incident data for 2006 also indicates that the majority of accident victims were women, but the proportion was smaller (59%). Half of the bicycle accidents involved people aged 50 or older, including one fatality, a 65-year woman.

Ground transport was used for most of the accidents. However, there were two cases of MEDEVAC involving accidents occurring within the National Park; a third case would have been evacuated by air, but the service was not available at the time. A significant proportion of accidents (43.8%) requiring EMS support occurred between 7:00 and 9:00 a.m.

3.4.5 Self-Reported Industry Data

As part of the survey of downhill bike tour operators, the questionnaire asked about accidents experienced in 2007. Self reports were submitted by 5 out of 7 downhill bike tour companies for 2007. The five companies reported a total of 78 incidents of "rider down" from a total of 7,078 clients. The majority were minor incidents, but "911" was called in 15 cases and riders were taken to the ER for examination in a total of 30 cases.

Chart 7



Source: Kimura International, 2008

4. Community Input

Community input was actively sought during the study process. The Department of Public Works sponsored two rounds of public information meetings. Each round included meetings in both Kula and Makawao and publicized through newspaper, radio, and online calendars. Meetings were also held with stakeholders groups and individuals—in person and by telephone and e-mail.

4.1 Public Information Meetings

4.1.1 Public Meeting 1

Meeting Time, Location, and Purpose

The study team for the Maui County Downhill Bike Tour Study conducted the first set of public meetings on Monday, July 21, 2008 at Makawao Elementary School and Tuesday, July 22, 2008 at Kula Community Center. The purpose of the meeting was to obtain public input on alternatives to be assessed in the study.

Based on the attendance sheets, 13 people attended the July 21st meeting and 21 people attended the July 22nd meeting. Both meetings used the same format which consisted of a plenary session and slideshow (see Appendix E).

At each meeting, attendees were divided into two groups for discussion. Recorders summarized key points on flip charts visible to the entire group. To organize the discussions, the groups were asked to direct their suggestions and comments to three key themes:

- Physical improvements
- Regulations
- Safety, courtesy, enforcement

At the end of the working session, which lasted 45-50 minutes, one person from each group volunteered to be the spokesperson. The spokesperson recapped his or her group's discussions to all the attendees. After each presentation, the facilitator checked with the other group members to ensure that points had been conveyed accurately. During this time, group members had an opportunity to clarify or elaborate on their original comments.

Public information meeting at Makawao Elementary School, July 2008

4.1.2 Public Meeting 2

Meeting Time, Location, and Purpose

The study team conducted the second set of public meetings on Wednesday, November 19, 2008 at Kula Elementary School and Thursday, November 20, 2008 at the Eddie Tam Memorial Center in Makawao. The purpose of these meetings meeting was to review preliminary alternatives and to obtain feedback on them.

Based on the attendance sheets, there were about 40 people at the November 19 meeting in Kula and 15 people at the November 20 meeting in Makawao.

Both meetings used the same format which consisted of a slideshow presentation followed by facilitated discussion (see Appendix F).

Public Input

At each meeting, attendees were given an opportunity to comment on each of the preliminary proposals brought up in the slideshow. As the discussion progressed, main points were recorded on flip chart paper (the comments are reproduced below).

Kula, November 19, 2008

Regulatory Proposals

Mandatory pull-outs

- Radio communication; increase shoulders, avoid separate bike paths
- Enforcement—reward those who comply

Bike-free zone

- Should be 7-9 a.m.?
- Ban vans during this time—"van free" zone
- If bikes stay on right side, there's no need for a bike-free zone

Restrict the number of tours

- Economy has reduced the number of tours; conditions are better now
- Vans are the major problem
- Riders not staying on right side; ineffective tour leaders ("bad apples") spoil it for all
- Laws are abused by drivers as well. The general public is unaware of bicyclists' rights

Regulate spacing of convoys

- National Park was doing this previously
- Some tour companies do this; others don't
- Difficult to control given the nature of the activity; tours end up having to stop for a variety of reasons and the spacing gets messed up
- "Ticket dispensers" could be used to regulate timing and keep spacing

Credential program

- Need enforcement, "teeth"

Company name on vans

- Required by PUC
- Many of the proposed regulations are already regulations imposed by other agencies

Rider screening

- Age restrictions are less important than skill level
- Kids often have more (recent) riding experience than adults
- Most accidents have been middle-aged riders, not kids
- Agility test for riders

- There used to be a space where riders could be screened at the beginning of the ride, but it was fenced off by Haleakala Ranch. The ranch then offered the land (to the State), but no follow up.

Surcharge

- Bike tour company owners don't like it
- Tour prices/costs have already gone up

Hotline

- Worked for helicopter noise several years ago

Makawao, November 20, 2008

General

- Consider historical data on tour numbers and participants
- Costs—who pays for this?
- Concerned that benefits are for seven private companies
- Don't feel that recreational bicyclists will benefit from pull-outs
- Recreational bicyclists don't want to go down Haleakala
- Public policy questions and budget allocations will be decided by Council
- Makawao merchants are interested in safety
- Don't want the bike tours to divert from limited resources

Physical Improvement Proposals

- Don't understand why all cyclists would be affected by a ban (on certain roads during peak traffic period)
- There should be a bike-free zone on Baldwin Avenue; or limit to no more than 3 riders in tandem
- Conform to Community Plan, which does not allow bicyclists on Baldwin Avenue
- Build bike path along Baldwin or use Highway 37
- Tours need to be spaced at least 10 minutes apart
- Coordinate among the bike tour companies
- NPS set up time intervals. First 3 companies had to start 10 minutes apart. All tours thereafter needed to leave 5 minutes apart.
- Draft NPS commercial services plan is expected in the spring
- Ban all bike tours

Regulatory Proposals

- Ordinance needed to regulate safety gear, equipment maintenance, speed limit
- NPS already has many of the regulatory proposals in their regulations (as conditions attached to the use permit); therefore some proposals are redundant
- Add company name identification to the back of trailers
- Flashers on vehicles
- Add company identification on bicycles
- If there is a hotline, complaints need to have follow through
- When a complaint comes in, the responsible company needs to be notified immediately so they can take action
- Tie permits to the permitting process. Companies that violate regulations should be penalized through the permitting process.
- What kind of investigation process will there be?
- Drug/alcohol testing needed for tour leaders and van drivers
- Control tour leaders who exhibit unsafe behavior
- Support Baldwin Avenue bike path
- Multi-purpose paths are needed on Maui
- Responding to comment that Baldwin Avenue path will disproportionately benefit tour companies—taxpayers pay for a variety of recreational facilities, including facilities that individual taxpayers may have no interest in.
- Concern about the downhill speed on the proposed Baldwin Avenue path
- Minimum age isn't correlated with skill; it's not worth regulating
- Provide opportunities to opt out of tour with full or partial refunds
- Standardize experience criteria
- Advanced skills are needed to go down the mountain
- Based on his experience, Glenn Kimura said that rides are not unsafe if participants listen to the rules and concentrate

Safety, Courtesy, and Enforcement Proposals

- Hotline—immediacy is important in promoting accountability. At one time, the industry implemented a hotline using a commercial answering service. Early on, there were 250 calls per month, including 15 calls from one person during a one-week period. The number of calls dropped to around 7 per week. The problem was that the public didn't call.

- Realize that some companies are trying to do the right thing and maintain good community relations. Don't want bad apples to characterize the industry.
- In the past, there's been opposition to road signs in Kula
- The Paia intersection is disrupted by tour groups. In particular, motorists wanting to make a right turn have to wait several cycles while bicyclists cross the highway. Regulation is needed.
- How to implement? Does everything need an ordinance?
- Make some regulations part of the permitting process.
- Let visitors have a good, safe experience, many seek out the downhill ride; but provide a designated stretch
- Stop tours at Osskie-Rice Arena
- When asked whether the tour companies have an association, the owner of a guided bike tour company responded that there is a loose association only. The companies cannot agree on operations.
- Make Maui more bike friendly, but facilities should be available for all bicyclists (residents, visitors, riders of all skill levels)
- Support an off-road path down Haleakala (mountain biking)
- Altitude can have a significant effect on riding ability
- Oppose Baldwin Avenue path as an inappropriate diversion of resources
- Guided tours are better at controlling riders
- National Park roads seem more hazardous (than State and County roads)
- A lot of visitor activities are inherently risky
- Long-time residents speed on Crater Road, Haleakala Hwy

4.2 Stakeholder Meetings

4.2.1 Kula Community Association

The Kula Community Association (KCA)[1] represents the community located in the early stages of the downhill bicycle tour, including Crater Road and portions of Haleakala Highway. KCA has taken a pro-active stance toward the commercial downhill bicycle tours. In a Bicycle Tour and Rental Safety Position Statement adopted in March 2007, the association declared:

> The Board of Directors of the Kula Community Association support measures that will improve the safety of downhill bicycle tours and rentals and address the concerns of Kula's residents and visitors, Upcountry motorists, and others while maintaining the quality of this visitor industry activity. The Association is interested in a solution that applies to all commercial bicycle activities, is based on accurate information collected through public study and with the input of all stakeholders.

The complete text of the KCA statement may be found in Appendix D.

In February 2008, KCA queried its members about the downhill bicycle tours. In its annual survey, KCA included the following question:

> The County of Maui has hired a firm to conduct a study of the commercial downhill bicycle tour industry. Part of the study will ask for community input. Have you seen or had problems with the commercial bicycle tours or their riders? Do you have an opinion on what the County should do, if anything, about the tours?

A total of 108 respondents provided comments on the bicycle tour question, including 41 written and 67 emailed comments.

The downhill bike tour question on the Kula Survey was an open-ended question that allowed respondents to express their thoughts without pre-established categories. For analytical purposes, the responses were post-coded into a more limited number of themes. Each separate idea expressed by a particular respondent was assigned to the most relevant category. Some respondents expressed more than one idea; therefore, the total number of responses or comments (194) exceeds the number of respondents (108). By post-coding, it was possible to determine the frequency of mentions and proportion of respondents expressing similar themes.

The survey was neither structured nor implemented as a scientific instrument, so the responses cannot be generalized to a larger population. Nevertheless, the survey responses provide a valid representation of community sentiment.

[1] There is no community association in Pukalani. Makawao and Paia have only merchants' associations.

In particular, the survey revealed a wide spectrum of opinions about the downhill bike tours. There were 23 mentions of bicycle tours being "hazardous," 22 mentions related to "nuisance" and 18 calls for a "ban or stopping the tour." Yet there were also 23 mentions of bicycle tours being "fine, no problem, or allowed to continue." Comments in this category were as frequent as comments related to "hazard." A large number of respondents also mentioned the need to improve physical facilities for bicycling with 23 comments calling for (more) bike lanes or bike paths.

Table 5. Kula Community Survey, 2008
Survey Findings by Category
(108 Respondents)

Response Category	Number	Percent
Provide bike lanes or paths	23	21.3%
Hazardous activity	23	21.3%
Leave them alone; they're fine; no problem; allow them to continue	23	21.3%
Nuisance	22	20.4%
Ban; stop tours	18	16.7%
Restrict number of tours	16	14.8%
Complaint with how tours are conducted; not following rules of the road	9	8.3%
Increase safety; do it safely; make it safer for everybody	8	7.4%
Independents are hazardous	7	6.5%
Regulate (general)	7	6.5%
Restrict rider quals; screen riders	7	6.5%
Restrict time or routes	7	6.5%
Surcharge fee; cyclist fee	6	5.6%
Other	4	3.7%
Restrict tour size	4	3.7%
Good for tourism	3	2.8%
Situation has improved	3	2.8%
Aloha needed	2	1.9%
Support small business	2	1.9%
Total number of specific responses	**194**	

Percentages calculated on base of 108 respondents

Meeting with KCA Representatives

According to KCA representatives, the organization's position is that safer roads are needed for everyone. At the same time, two concerns were highlighted:

1. Safety concerns. Drivers fear that a bicyclist will fall in front of their cars.
2. Traffic concerns. Because roads are blocked, some residents cut through the side streets, creating a speeding problem in residential areas, e.g., Kimo Drive

Among the specific concerns mentioned were complaints by residents along Hwy 377 about trash, riders using their lawn as bathrooms, and accidents that caused property damage or traumatized homeowners.

When bike tours were barred within the National Park, the community lost the only form of regulation. Park rangers conducted random inspections and used to check license, insurance, and equipment.

4.2.2 Main Street Program

Meetings with members of the Main Street program, including representatives of the Main Street Boards from Makawao and Paia, were held in July and August 2008. The purpose of these meetings was to discuss how the Main Street program could be involved most effectively in the downhill bike tour study.

The group's overall position is that the industry needs to be regulated, but not banned altogether. Government oversight has faltered by allowing regulations to fall through the cracks.

In a letter distributed at the August meeting, a Makawao merchant raised a number of concerns, including adverse impacts on local businesses and interference with pedestrian movements. Seniors are not coming into town and businesses are experiencing slippage in sales as patrons go to other, more hospitable commercial areas.

Members of the Main Street program saw little evidence of increased business due to exposure from the bicycle tours. In the early days of the bicycle tours, according to one member, a greater effort was made to "shop the town" and cultivate personal relationships with merchants. But during her tenure (working at the family store), she saw no financial benefit from the passing bicycle tours.

4.2.3 Maui Bicycle Alliance

The Maui Bicycle Alliance expressed its concern that community feelings toward downhill tours will spill over to casual cyclists. For example, local riders have been run off the road. The Alliance is also concerned that proposed rules will be so general that they will have unexpected impacts. For example, insurance rules that might affect nonprofit organizations sponsoring bike events. Regulatory measures need to differentiate between different bicycling groups.

MBA opposes the Baldwin Avenue bike path because there are other, higher priority projects that would better serve Maui residents, but haven't been done yet. Maui is going backward in the use of Transportation Enhancement funds. The limited funds should be used for the local community. Plus there are areas on Baldwin where shoulders or pull-outs can be put in.

Summarizing the MBA's positions:

- Downhill bike tours need to be regulated
- Policies should be supported by good data and statistics
- Local bikers have had a hand's off approach, as long as it doesn't affect them.

4.2.4 Upcountry Citizens for Bike & Traffic Safety

The objectives of Upcountry Citizens for Bike and Traffic Safety are:

1. Make bike tours safer
2. Make bike tours more compatible (with community use of roadways)

Group leader, Jimmy Muschietti, recognized that bike tours are not going away. It's not the companies, but the procedures that are the problem, he stated. It would be better if they remove the vans and follow the law by keeping bikers to the right or on the shoulders. Vans don't need to constantly follow the convoy, but can be stationed along the routes so they are within minutes of the convoy and still function as first responder.

4.2.5 Downhill Bicycle Tour Companies

During a May 2008 meeting with downhill bike tour operators, they noted the dramatic change that occurred when the National Park Service ordered the safety stand down in October 2007. Recently, NPS has begun issuing Commercial Use Authorizations that allow vans to go into the park for motorized tours—but bike tours are still prohibited.

In the park, the bike tours don't affect residents. The problems start in Kula. The tour operators recognized community frustration because the industry had gotten "too large." At the height of their operations (just before the stand down), there were 30-35 vans per

day going up to Haleakala. Currently, peak numbers are about 19 vans, of which 11-12 go up for the sunrise tour. Numbers are lower in the off season.

The tour operators emphasized that many of the problems have gone away or taken care of themselves as the numbers of bike tours and riders have fallen. They insisted that the picture has changed, so it's important to look at the current situation and not what existed before. Under *existing* economic conditions, they said, companies are successfully using the infrastructure they have.

They also admitted to "bad apples" in the past, presumably referring to poor quality or under qualified tour personnel. There can be bad apples in any company and they were weeded out when the companies cut back. The operators seemed to allude to the industry's ability to self-police.

Opinions on Proposals being Floated

Pull-outs. One of their key points is that bicycles don't want to be treated like inferior vehicles. If the bikes pull over, there's no problem, but negative community attitudes remain. They cite the 2006 police study which identified a problem with driver impatience. They're hoping for new or improved pull-outs.

Reducing Tour Size. The tour operators expressed a strong opposition to trimming the size of the tours. They pointed out that the Maui Police Department recommended 12 riders, which is not much different from the current 13. The loss of one additional customer would have a large financial impact on their operations. The guided tour companies use 15-passenger vans that fit 13 plus a 2-person crew. Overhead, insurance, and gas costs have increased. Some days there are only two companies going up.

Moving the Van/Trailer. Van/trailers don't need to be a half mile behind. The problem of traffic tie-ups can be addressed if the vans/trailers pull over.

Demand for Bicycle Tours

The discussion of financial hardships led to the point that market demand for bike tours will remain. The question (for the guided tour companies) is: what is the safest product that can be delivered? Some companies contended that they might be squeezed to the point where it becomes more cost-efficient to simply rent bicycles and not provide guided tours.

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5. Regulatory Environment

This chapter reviews the regulatory environment in which the downhill bicycle tours are conducted. Regulations covered in this chapter include the County's business tour operator permit, National Park Service commercial permit, motor carriers regulation under the Public Utilities Commission (PUC) and Department of Transportation (DOT), and traffic laws.

The downhill bicycle tour industry has similarities with two regulated industries: Commercial Ocean Recreation Activities (CORA) on Maui and pedicabs on Oahu. One section of this chapter examines how these industries are regulated.

5.1 Bicycle Tour Business Permit

A permit specific to bicycle tour businesses is required under Chapter 5.22 of Maui County Code:

> A. It is unlawful for any business or person to conduct a bicycle tour on *County property* without first obtaining a bicycle tour business permit issued by the director in accordance with this chapter (italics added).

The ordinance requires contact information for the applicant; description of areas, location or routes to be utilized for the proposed bicycle tour business; description and registration numbers of all motor vehicles and bicycles to be used by the business; description of any structure or personal property to be used in conjunction with the bicycle tour business; and any other information that may be required by rules adopted to enforce the requirements and rules of the chapter. As amended in 2006, the ordinance requires the bicycle tour business to obtain comprehensive liability insurance coverage of no less than $3,000,000. The bicycle tour business is further required to indemnify, defend, and hold the County harmless against any loss sustained, in whole or in part, as a result of the activities of the bicycle tour business over and above those losses covered by the bicycle tour business' general liability insurance coverage, including claims regarding design and maintenance of roadways and the County's permit review and approval process.

The permit to conduct commercial bicycle tours is processed by the County Department of Finance, Motor Vehicle Registration and Licensing division. As currently interpreted, this permit does not apply to the independent tour companies. The permit costs $100.00 per company per year. The DMV collects the application and passes it to the Maui Police Department which assesses the route(s). The application is returned to DMV which issues the permit. In 2008, three companies had this permit.

In 2007, the Hawaii State Legislature passed enabling legislation that allows County Councils to pass additional, detailed regulation of bicycle tours on State and County roadways.

> **[§46-16.3] Regulation of commercial bicycle tours.** Any law to the contrary notwithstanding, the council of any county may adopt and provide for the enforcement of ordinances regulating commercial bicycle tours *on state and county highways*, including but not limited to ordinances relating to the number of tours, the number of bicycles within a tour, scheduling of tours, physical spacing of tours, rules of the road, health and safety requirements, equipment maintenance, driver and guide qualifications, driver and guide drug testing, accident procedures and reporting, and financial responsibility requirements. Each county shall follow federal guidelines for commercial bicycle tours that begin from federal or state parks and continue on to state highways.

5.2 National Park Service, Commercial Use Authorization

The National Park Service (NPS) began issuing permits—called Commercial Use Authorizations (CUA)—for commercial bicycle tours in 1986. In the beginning, client numbers were estimated at 24,000. At the peak of its popularity in 2005, there were 106,000 clients participating in downhill riders through Haleakala National Park. In November 2005, NPS implemented an Interim Operating Plan to manage commercial services while developing a Commercial Services Plan (pending as of December 2009). Under the Interim Plan, the number of bicycle tour participants was capped at 90,000 per year.

For as long as the bike tours have been operating in the national park, there have been efforts to mitigate serious accidents and injuries. Following a client fatality in 1998, NPS conducted a root cause analysis and established a bicycle work group to develop and implement a Safety Action Improvement Plan. The root cause analysis determined that weather, equipment, and speed were primary causes of accidents. Based on the Safety Action Improvement Plan, more stringent conditions were added to the bike tour permit.

Following are the conditions that were attached to the CUA for bike tours—suspended as of October 2007. The rules are duplicated mostly verbatim (see below) to illustrate the breadth and detail of their coverage. Among the operational and safety requirements are bike safety inspections, maximum group size limits, launch intervals, required personal protective equipment, specifications regarding the bicycle leader and vehicle escorts, accident reporting, and minimum requirement that at least one employee per tour group have first aid/first responder qualifications.

As described in the 2007 NPS Safety Analysis Report, there is no requirement for NPS personnel to be on duty for the bicycle tours to operate, but NPS routinely provided

ranger staffing during the sunrise visitation period to oversee the commercial tour operations, ensure compliance with permit conditions, mitigate conflicts (at the visitor center parking area), and respond to accidents and injuries.

NPS Special Operations & Safety Plan
Under the Commercial Use Authorization (selected sections; see Appendix A for precise wording)

- Each bicycle shall be inspected to assure that it is mechanically sound and in safe operating condition before each trip. Inspections to include tire condition and pressure, brakes, reflectors, lights, seat adjustment, handle bars, and other necessary items for safe operation.

- All tour riders and employees to be provided personal protective equipment, including helmets, rain gear, jackets, and gloves or mittens. Helmets must be worn.

- Tour group size is not to exceed 14 bicycles, including the guide

- Tour departures shall be staggered with a least a 10-minute interval between each group

- Tour clients, bicycles and support vehicles not to obstruct vehicular or pedestrian traffic

- Every opportunity shall be taken to allow following traffic to pass—either in a legal passing zone or by pulling off the roadway

Special Conditions of Authorization, Haleakala National Park

Applies to astronomy tours, bike tours, hiking and backcountry tours, horse tours, and vehicle (bus) tours

I. Administrative

- Responsible for informing clients of hazards likely to be encountered during their visit/tour, and to provide guidelines, rules and practices that will mitigate and manage risk. Including:

    - High elevation issues: influences on medical conditions, extreme temperature changes, or wind conditions
    - Weather conditions
    - Steep narrow roadways, limited shoulders, limited sight distance, etc.

- At all times, carry permit, conditions of authorization, and any addendum

- Agree to cooperate in surveys conducted by NPS designed to assist in park management actions

- Annual report, required to submit annually, but not later than 30 days after December 31, an annual report which summarizes visitor use, including number of clients and gross revenues for the year in the report.

- Bi-annual safety report: summary of the most recent safety inspection to be submitted twice a year (March 1 and November 1)

- Revocation: CUA subject to revocation, suspension, and/or non re-issuance for violation(s) of any term and conditions of the permit and/or violation of any Federal law by the operator, his/her employees, an/or clientele of the Holder.

- Suspension Policy: tours will cease if any conditions of the authorization are not met. After two suspensions in a 12 month period, the CUA will be automatically revoked.

    - Corporate Immediate: Any of the following will result in an immediate suspension of the permit and the permit will not be reinstated until the situation is remedied: Lack of proper insurance coverage, expired IBP or CUA, revocation of PUC license, violation notices issued on consecutive days for the same infraction; and/or voucher debit account has a negative balance.

    - Individual: Any individual not in compliance with the conditions of authorization will not be able to conduct tours within the park (e.g., driver with no Medical Examiner card). If actions cannot be remedied on-site, the tour will cease.

    - Company—Major: Any one of the following infractions will result in a three-day suspension effective 30 days from the date of the infraction: more passengers than the number of seat belts; false documentation; and/or lack of training as required in conditions of permit.

    - Company—Minor: After 10 violations of conditions issued (verbal or written) to a company within a 12-month period, a one-day suspension 30 days from the date of the 10^{th} infraction will occur.

- Tour guides/leaders and drivers will have nametags with the company name and employees name clearly readable on outside of garments.

- Holder must provide names, addresses, and phone numbers of tour clients or employees and any other statistical information upon request.

II. Vehicles

- Proof of Operating Authority: Holder to provide proof of current operating authority from the Hawaii PUC and from the DOT as applicable. All companies must show proof of State Insurance Registration.

- Suspension or Revocation of PUC and/or DOT Authority. If, for any reason, the PUC and/or DOT authority is placed in any status other than "Active" this CUA wil be immediately suspended and the Holder will not be allowed to enter Haleakala National Park. No prior notice of suspension is necessary. After such a suspension has occurred, the Holder must apply for reinstatement of the CUA, show proof of reinstatement by PUC and/or DOT, and receive written authorization for Haleakala National Park prior to entering the Park.

- The Holder will establish a system of inspection and maintenance of transportation used in the activity. Minimally, the inspections will be documented on a semi-annual basis. The inspection must list all vehicles/trailers used, the condition in which it was found, repairs made, etc. The system shall be traceable by vehicle/trailer license number. These documents will be maintained by the Holder and will be made available for park inspection upon request.

- Rules of the Road: All vehicles will comply with posted traffic regulations, including speed limits and double-yellow centerline markings. Holders shall take every safe opportunity to use roadside turnouts to allow faster traffic to pass. Failure to comply with traffic regulations will result in citations to the driver with possible suspension to the Holder.

- Commercial Tour Vehicle Inspections: The Holder shall cooperate fully regarding the inspections of commercial tour vehicles in Haleakala National Park. Inspections are conducted unannounced for visitor safety. Vehicles are checked for safety and mechanical deficiencies, compliance with current state and federal laws and regulations. Drivers' licenses, medical certificates are checked.

- All passenger vehicles must display readily visible markings identifying the business name on both exterior sides of the vehicle. Minimum letter size is 4 inches. Vehicles that transport 7 or less passengers may display PUC number on the front and rear bumper; all larger vehicles must display on the side.

II. Equipment

- Each piece of equipment used in the activity shall be inspected to assure that it is mechanically sound and in safe operating condition before each trip. A safety inspection is to be made at the departure point of the tour. Minimally the inspections shall be documented on a monthly basis.

III. Training

- New leaders will be required to have training on the tour a minimum of 3 times with experienced leaders prior to soloing in that role. Training trips will be documented showing date and time of trips and signature(s of the experienced employee conducting the trip. Bike tour training trips will be comprised of a minimum of three persons: tour leader, trainee leader, and driver. Experienced guide will inform the entrance station upon arrival (or park ranger) that they have a trainee. The entrance station staff or park ranger will initial the training documentation provided by the holder.

- Same for new drivers.

Conduct of Tour and Education

- Supervision/Compliance: Holder shall provide adequate supervision of its employees and clients, including:
  - Clean areas
  - Protection of natural and cultural resources
  - Out of bounds travel
  - Trash items
  - Cigarette butts
  - Feeding wildlife
  - Soil erosion
  - Water conservation
  - Pest management

- Waivers: The Holder may require that participants sign an acknowledgement of risk prior to participating in the activity. If the Holder chooses to use such a form, the Superintendent must approve it. A sample of the "Acknowledgement of Risk" form shall be attached to the completed permit application and/or renewal. Multiple acknowledgements are not permissible.

- Limitations: Bike tours departing within the park boundaries may not exceed 13 clients, 1 guide and 1 driver for a total of 15 persons.

Emergency Medical & Safety

- Reports of Incidents: The Holder is required to report <u>any</u> personal injury and/or property damage incident occurring within the parking involving Holder vehicles, clientele and/or employees. The report must be made to a Law Enforcement Ranger at the first available opportunity before leaving the park. A report will consist of a written or verbal description of the incident. The Holder must cooperate with any investigation of the incident by the National Park Service personnel.

  - If the Holder has clients in distress or need of medical attention that would not warrant an ambulance, it is the Holder's responsibility to provide transportation to a lower elevation, or to further care. The needs of a distressed client will supersede the regular completion of the tour.

- Each vehicle/tour associated with the permit shall carry and maintain a kit for emergency medical care. The kit shall be of sufficient size for the number of persons in the group and the nature of the activity.

- At least one person from each tour/vehicle shall have the appropriate training/certifications as listed below. That person must carry the original card (CPR card must be separate from other training certifications).

- Bike tours: CPR & First Responder

  - CPR Certification must meet Federal Department of Transportation standards.

  - First Responder Certification must meet Federal Department of Transportation Standards

  - Violation of any regulation and/or condition of this permit may constitute grounds for suspension or revocation of this permit. Holder employees and clients are subject to the same laws and penalties that apply to all park visitors. Repeat violations or problems may result in a suspension of the permit for an undetermined amount of time.

Special Operations & Safety Plan Addendum for Bike Tours

Equipment

- Each bicycle inspected to insure that it is mechanically sound and in safe operating condition before each trip. Prior to departure, a safety inspection of each bike on the tour, including tire condition and pressure, brakes, reflectors, lights, seat adjustment, handlebars, and other necessary items.

- Provide all riders and employees with safety gear, including helmets, rain gear, jackets and gloves or mittens. Helmets required.

- Provide radio communication between the employee on the lead bike and the driver of the support vehicle. The support vehicle will have the capability to contact the NPS, Home Base, Haleakala Dispatch or 911 at all times.

Conduct of the Tour

- Group shall not exceed fourteen bicycles including the guide.
- Provide a leader on a bicycle and a vehicle escort for each trip.
- When other bicycle tour groups are on the road, tour leaders shall take the following action to reduce traffic congestion
    - The first three groups of the sunrise launch will allow a minimum of 10 minutes "lead time" between groups at the beginning of the tour
    - All subsequent groups after the first three sunrise launches must keep a minimum of 5 minute "lead time" between groups at departure and at rest stops.
    - A minimum distance of ½ mile and 5 minutes will be maintained between bicycle groups at all times.

Parking, Off-loading, and Departure Protocols

- Bike tour parking in the Haleakala Visitor Center lot is restricted to 10 designated commercial tour parking stalls on the north side of the lot. Bicycle tour parking at any area shall not interfere with access.
- Bicycle tours shall depart beginning with the tour parked closest to the parking lot exit. Parking stalls may not be blocked or otherwise saved for another tour except for the first three sunrise launch trips. The first three sunrise launches are reserved for companies on a monthly rotation basis. Tours may not move into a stall left vacant by a departing tour in order to change their departure order. Three parallel rows with 3 vans and trailers will be parked behind the 10 stalls for a total of 19 bike tour vans and trailers.
- The tour guide is responsible for backing the van and trailer into the traffic lane. Only one van and trailer may be staged to exit parking lot at any given time.
- If a tour is not ready to leave the launch point when the ten minute or five minute interval has passed, that tour will lose its place in line and allow the next staged tour to leave the launching point. The departure order will then resume with the tour that was temporarily delayed.
- No more than 5 bicycle tour groups may unload bicycles at any one time at the Haleakala Visitor Center area.
- Launching at Hosmer Grove is on a first-come, first-serve basis by LE Ranger permission,

- Any accident involving bicycles and/or their riders must complete the Bicycle Accident Report Form and given to a park ranger.

The Holder will ensure that clients, bicycles and support vehicles do not obstruct vehicular or pedestrian traffic. The holder shall take every opportunity to allow traffic to pass-either in a legal passing zone or by pulling off the roadway (emphasis in original).

Each company will provide staffing to be with clients at viewing areas. There must be at least one employee for every 1-5 company vans and every multiple thereof.

5.3 Motor Carrier Transportation Regulations under the Public Utilities Commission (PUC)

In 1961, the Hawaii State Legislature established a policy to regulate the transportation of persons and property, for commercial purposes, over the public highways. These laws govern commercial transportation in general, including the vans used by bicycle tour businesses to pick up and deliver clients to and from their hotels, provide tours of Haleakala National Park, and drop off clients at the bicycle tour launch area.

The Legislature empowered the Public Utilities Commission (PUC) with the authority to regulate the economic and safety aspects of motor carrier transportation. In 1977, the State legislature transferred the responsibility of regulating the safety aspects of motor carriers from the PUC to the Bureau of Motor Carrier Safety—now called the Motor Vehicle Safety Office within the Department of Transportation. The PUC maintains regulatory jurisdiction over the economic aspects.

Any person or entity that transports passengers or property for compensation or hire, over the public highways in Hawaii, must obtain authorization from the PUC to be either a common carrier or contract carrier. The PUC tour license costs $15 per vehicle per year.

Properly Marked Vehicle

A motor carrier authorized by the PUC to operate as either a common carrier or contract carrier must have (1) the name, logo (identifying symbol), or initials of the company , and (2) its PUC number prominently displayed on both sides of the vehicle and/or bumpers (for smaller vehicles). Vehicles with seating capacity less than 7 can have name and PUC number on front and rear bumpers. All others must display their name and PUC number on both sides of the vehicle. Markings must be painted in contrasting colors and the letters and figures cannot be less than 2-1/2 inches in height and ¼ inch in width.

Automobile Liability Insurance (for motor carriers of passengers)

- 1-7 passengers: bodily injury or death per person of $100,000; bodily injury or death per accident of $200,000; liability for property damage of $50,000

- For 8-25 passengers, liability for bodily injury or death per accident increases to $500,000
- For more than 25 passengers, liability per accident increases to $1,000,000

Penalty for Violating Motor Carrier Laws, Rules, Regulations, and Orders

Commission is authorized to issue a citation of $1,000 for each violation (plus $500 every day thereafter for continuing violation)—e.g., operating without a PUC license, expired automobile liability insurance, failure to maintain a tariff, etc. It may also institute proceedings to suspend or revoke the carrier's authorization.

5.4 Traffic Laws: Bicycle Riding Regulations

Proper bicycle riding—following the rules of the road—is essential for the safety of bicyclists. Where bicyclists share the road with motorists, rules of the road help to ensure consistency of movement and the ability to better predict what the "other guy" will do. Ultimately, the rules are the foundation for both road safety and courtesy. Bicycling laws are laid out in State law in Section 291C, Hawaii Revised Statutes. For the most part, Hawaii's laws are similar to those in other states. However, people who don't bicycle regularly or are unfamiliar with bicycle riding on highways may require a refresher.

Rights and Responsibilities of Hawaii Bicyclists

- Hawaii bicyclists are considered drivers of vehicles.
- Bicyclists have most of the same rights and responsibilities as motorists.
- To be taken seriously by other vehicle drivers, cyclists must obey traffic laws.

Riding on the Right	If bicyclists are traveling slower than cars, the bicyclists should ride as near to the right hand edge of the road as practicable.
Riding in the Middle	Bicyclists may ride away from the far right side only under the following conditions: ▪ When preparing for a left turn ▪ Where necessary to avoid road-side hazards ▪ Where the traffic lane is too narrow for a bicyclist and a motor vehicle to travel safely side by side ▪ When bicyclist is traveling at the normal speed of traffic
Follow Lane Markings	

Obey Traffic Signs and Signals	Violators are subject to the same penalties as drivers of motor vehicles
Ride Single File	Bicyclists must ride single file on a road. On bicycle lanes and paths, riding two abreast is permitted when the lane or path is wide enough.
Do not Cling to Moving Vehicles	
Use Lights at Night	Use a headlight and red rear reflector at night (30 minutes after sunset until 30 minutes before sunrise).

From State Department of Transportation pamphlet. Traffic laws in §291C *Hawaii Revised Statutes*

Bicycle Convoy

Escorted bicycle tours ride in a convoy with up to fourteen riders. Does this constitute a procession or parade? According to Section 10.52.060, Maui County Code, a permit is needed if the procession or parade contains two hundred or more persons or fifty or more vehicles.

5.5 Bicycle License and Tag

All bicycles that have two tandem wheels that are 20 inches or more in diameter are required to be registered. The one-time registration fee is $15. The bicycle registration program is administered by the Maui Department of Finance, Motor Vehicle Registration and Licensing Division.

5.6 Complete Streets

The 2009 State Legislature passed, and the governor signed, what is referred to as the Complete Streets Act (Act 54). This law amended Chapter 286, Hawaii Revised Statutes, and directs the State Department of Transportation and County transportation departments to adopt a complete streets policy "to reasonably accommodate convenient access and mobility for all users of the public highways within their respective jurisdictions…including pedestrians, bicyclists, transit users, motorists, and persons of all ages and abilities." "Complete streets" is a nationwide initiative to promote safer, more livable, and welcoming road networks for everyone.

In Hawaii, the complete streets policy will consider implementation through new construction, reconstruction, and maintenance of roads and highways, with exceptions:

- Costs that are excessively disproportionate to expected benefits
- Safety of vehicular, pedestrian, or bicycle traffic placed at unacceptable risk
- Prohibited use of a particular highway, road, street, way, or lane by bicyclists or pedestrians, including within interstate highway corridors
- A sparseness of population, availability of other means, or similar factors indicating an absence of future need

This new law establishes a policy framework requiring State and County governments to take a broader look at how the transportation network serves all users through flexible design and sensitivity to the community context. As a policy statement, it is an important signal that the need to consistently accommodate different types of road users is a new priority in highway design.

5.7 Regulation of Businesses Similar to Commercial Bicycle Tours

Two comparable industries were considered as demonstration of how regulations could help to improve the use of public roads by the downhill bicycle tours. These industries are Commercial Ocean Recreation Activities (CORA) on Maui and pedicabs on Oahu.

5.7.1 Commercial Ocean Recreational Activity (CORA) Permit

In August 2009, the County of Maui adopted Chapter 10-102, Rules of Practice and Procedure for Commercial Ocean Recreational Activity (CORA) Permits[1]. The rules regulate the operations of six CORA categories: surfing, kiteboarding, windsurfing, kayaking, scuba diving, and snorkeling. The rules were developed to address overcrowding issues at County Parks through a permitting process.

Among the key features of the CORA rules are the following:

- Ocean activities operators are allowed to conduct business at 17 beach parks (compared to 26 beach parks before the rules).
- Limits are placed on the number of operators and students allowed in the parks.
- For each activity, the rules establish a ratio of the maximum number of students allowed per instructor

[1] Ordinances are enacted by the Maui County Council, while administrative rules are promulgated by the responsible agency. When the Council adopts (or amends) an ordinance into law, it sets the broad policies and standards that are to be implemented. Responsibility for carrying out the objectives of the ordinances falls to the agency with the necessary technical expertise and capability. Administrative rules cannot exceed the authority given in the enabling ordinance, nor can it conflict with any ordinance. The rules generally provide specific criteria and procedures to guide the agency's decision-making.

- At each park, there are specific restrictions on the kinds of activities that can operate and permitted locations within parks
- At some parks, restrictions on parking; equipment off-loading, loading, and storage
- Requires that all CORA instructors have updated health and safety training, and certification in a County-sponsored environmental protection and cultural awareness program
- Reduces or eliminates the number of hours available for park use on Sundays and holidays
- Requires one permit per park per activity
- Requires minimum insurance coverage
- Increased the cost of each permit to $500 (+ $100 application fee), with future fees to be set by the Council's Budget and Finance Committee.

The CORA rules are administered by the Department of Parks and Recreation, which has authority to suspend or revoke a permit, impose fines, and pursue criminal charges that could result in jail time for violators.

Comparison of CORA and Commercial Bicycle Tours

The CORA rules emerged after longstanding concerns by local citizens about the use and availability of public park resources. The primary objective of the CORA rules was to balance competing interests in an equitable manner. Public roads, like public parks, are subject to space constraints and congestion. However, there are significant differences between the commercial ocean recreation activities and commercial bicycle tours, and the environments in which they occur. Regulating uses on the affected roadways would involve both State and County agencies. The State Department of Transportation and County Department of Public Works have jurisdiction over State and County roadways, respectively, but traditionally have not been charged with extensive regulatory functions.

5.7.2 Honolulu Pedicabs

The City and County of Honolulu enacted an ordinance to regulate pedicabs in Waikiki in 1978, Chapter 12-5, Revised Ordinances of Honolulu. Pedicabs are human-pedaled carriages that transport passengers for hire. The number of pedicabs catering to visitors in Waikiki increased through the mid-1970s, resulting in significant congestion. The City justified regulation on the grounds that pedicabs are a vital and integral part of the public transportation system in the city, and thus requires supervision, regulation, and control.

Key features of the pedicab ordinance included the following:

- Evidence of financial responsibility in the form of minimum insurance liability coverage

- Certificate of pedicab operator, authorizing the parking of one pedicab in one authorized sidewalk pedicab stand and in one road pedicab stand
- Ability to pass an exam showing understanding of traffic laws and ordinances, knowledge of City streets, and physical fitness.
- Clarification that a pedicab operating on a roadway at a speed slower than the normal speed of traffic moving in the same direction is required to ride as near to the righthand curb or edge of the roadway as practicable, exercising due care when passing a standing vehicle or one proceeding in the same direction except under any of the following situations:

  (1) when preparing for a left turn at an intersection or into a private road or driveway, except where prohibited by official traffic control devices;

  (2) when reasonably necessary to avoid conditions (including, but not limited to, fixed or moving objects, vehicles, bicycles, pedestrians, animals, surface hazards, etc. or substandard width lanes) that make it unsafe to continue along the righthand curb or edge.
- Prohibition against processions, caravans, or trains of more than 15 pedicabs, unless a permit is obtained. But no pedicab procession, caravan, or train of any number is permitted during the hours of 6:30 to 8:30 a.m. and 3:30 to 5:30 p.m., Monday through Friday, except holidays.
- No vehicle can be operated as a pedicab for hire unless it is in a reasonably clean and safe condition inside, as well as externally. Every pedicab while on a public street is required to carry a battery- or generator-operated headlight and taillight with spoke reflectors on each wheel and tape reflectors along the front and back width of the vehicle.

5.8 Small Business Regulatory Review

The Small Business Regulatory Review Board was established in 1998 by the Small Business Regulatory Flexibility Act, codified in Chapter 201M, Hawaii Revised Statutes. The Board is attached to the State Department of Business, Economic Development and Tourism for administrative purposes. One of the main functions of the Board is to review proposed agency regulations that may affect small businesses. The Board's purview extends to "agencies" which are defined as any State or County board, commission, department or officer authorized by law to make rules, except those in the legislative or judicial branches. However, for requests regarding County ordinances, the Board may make recommendations to the County Council or the Mayor for appropriate action.

The regulatory review process focuses on a determination of small business impacts. Prior to submitting proposed rules for adoption, amendment, or repeal, the agency must prepare a small business economic impact analysis to educate the public about benefits and consequences of proposed rules. While regulations are needed to achieve important

public policy goals, sometimes they may be unduly burdensome to small employers. Regulatory flexibility ensures that small business regulatory impacts are measured and analyzed, and that less burdensome alternatives are considered.

After preparing a small business impact statement, the document is submitted with the proposed rules to the Board. Subsequently, the Board will post notice of and hold a public hearing in conjunction with its monthly meetings.

Small businesses can seek redress by petitioning the agency that adopted the objectionable rule whereupon the agency must forward the petition to the Board. The agency is required to periodically review rules affecting small businesses to determine whether the rules need to be continued.

Act 230, passed in 2008, created a small business "bill of rights" that requires agencies to include in their small business impact statement for proposed rules a more rigorous examination and justification of rules that impose standards more stringent than those mandated by any comparable or related federal, State, or County law.
The Small Business Regulatory Review Board is an advisory body that views itself as an advocate of small business.

The responsibilities of the Board include:

- Commentary on small business impact statements to the rule-drafting agency
- Identification and commentary on business impacts of existing administrative rules and regulations
- Recommendations to the Mayors or County councils regarding County rules
- Review of small business petitions and complaints on business impact

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6 Proposals

This chapter discusses proposals to improve the use of State and County roads by downhill bicycle tours and mitigate impacts on other road users. The first part of this chapter reviews the benefits and impacts of the proposals, which are divided into three categories: (1) physical improvements, (2) regulatory proposals, and (3) non-regulatory proposals. The second section shows an assessment of the proposals and summarizes the study recommendations.

6.1 Physical Improvements

6.1.1 Staging Area(s)

Description The current ban on downhill bicycle tours originating within Haleakala National Park has led to tours being launched outside the park boundary. This proposal involves improvements to the staging area(s) which are located adjacent to Crater Road (Hwy 378). These areas are used to off-load bicycles from vans or trailers, provide safety briefings, and line up riders for mount up and launch. The main staging area is located above Milepost 9 on the downhill side of Crater Road. A secondary launch area is located slightly higher on the uphill side of Crater Road. Improvements would consist of paving the shoulder area, creating a smooth transition to the road pavement, and installing fencing between the paved area and surrounding private property. Other improvements could include portable restrooms and descriptive signage that would make this a scenic overlook as well.

Benefits The main staging area is regularly used by visitors traveling to Haleakala National Park as a place to park and take in a spectacular scenic vista. Improvements to the staging area, therefore, would serve a range of users beyond the downhill bicyclists.

Impacts In addition to the initial construction cost, there will be operational costs to maintain the area, with expenses for landscaping, trash disposal, and restroom upkeep.

Discussion The upper staging area is located less favorably because bicyclists need to cross the roadway in order to start the downhill ride. A curve in the highway diminishes sight distance. However, it continues to be used because of space limitations at the lower staging site.

Lack of formal launch area

6.1.2 Shoulder Widening and Pull-outs

Description This proposal involves widening and/or lengthening shoulders so that an entire convoy can move off the travel lane and allow motorists to pass. Pull-outs are shorter sections of shoulder space that can accommodate a van with trailer, but is generally too short for a moving convoy. Figure 7 shows the typical plan of a pull-out. It would have a minimum length of 100 feet with tapered ends and a minimum width of 8 feet. Figure 8 shows typical cross-sections within an 80-foot right-of-way. The identified locations are currently grassed or graveled areas, and would be improved with asphaltic concrete.

A preliminary field check identified 32 locations along Crater Road (Highway 378) that are potential pull-out locations. These locations are shown in Figures 9a through 9d. Some of these places are already used as pull-outs by bike tour operators (labeled "existing" pull-out locations).

HDOT has selected four sites for initial improvement as "priority" pull-out areas—see Figures 9b and 9c.[1] Other locations, currently labeled "existing" or "potential" may be improved in the future.

There are 9 existing and potential pull-out locations along Haleakala Hwy (Hwy 377), as shown in Figures 9d through 9h.

There are 3 shoulder widening opportunities on the downhill side of Baldwin Avenue (see Figures 9i and 9j):

(1) makai of Haliimaile Road junction	2,640 feet (est.)
(2) Ohaoha Place to Job Corps	5,280 feet (est.)
(3) in front of Montessori School	2,640 feet (est.)

Potential shoulder widening location on Baldwin Avenue, from Job Corps looking mauka

[1] Construction of pull-outs on Haleakala Crater Road is designated as a Priority I proposal (No. 45) in *Bike Plan Hawaii*, HDOT's 2003 bicycle facility master plan

Unlike the pull-outs proposed for Crater Road and Haleakala Highway, the widened shoulders proposed for Baldwin Avenue, a County road, are long enough for the entire convoy to pull over while continuing to roll. A 1/4-mile widened shoulder can accommodate a typical tour group with the following assumptions:

- 14 bicycles maximum and 1.5 second spacing of bicycles traveling at 15 miles per hour
- Average speed of cars passing = 30 mph spaced 1.8 seconds apart
- If bicyclists were to travel at an average speed of 20 mph, the required distance doubles to 1/2 mile
- Reducing the number of bicycles reduces the required length to 1/6 mile (for bicycles at 15 mph)

Benefits

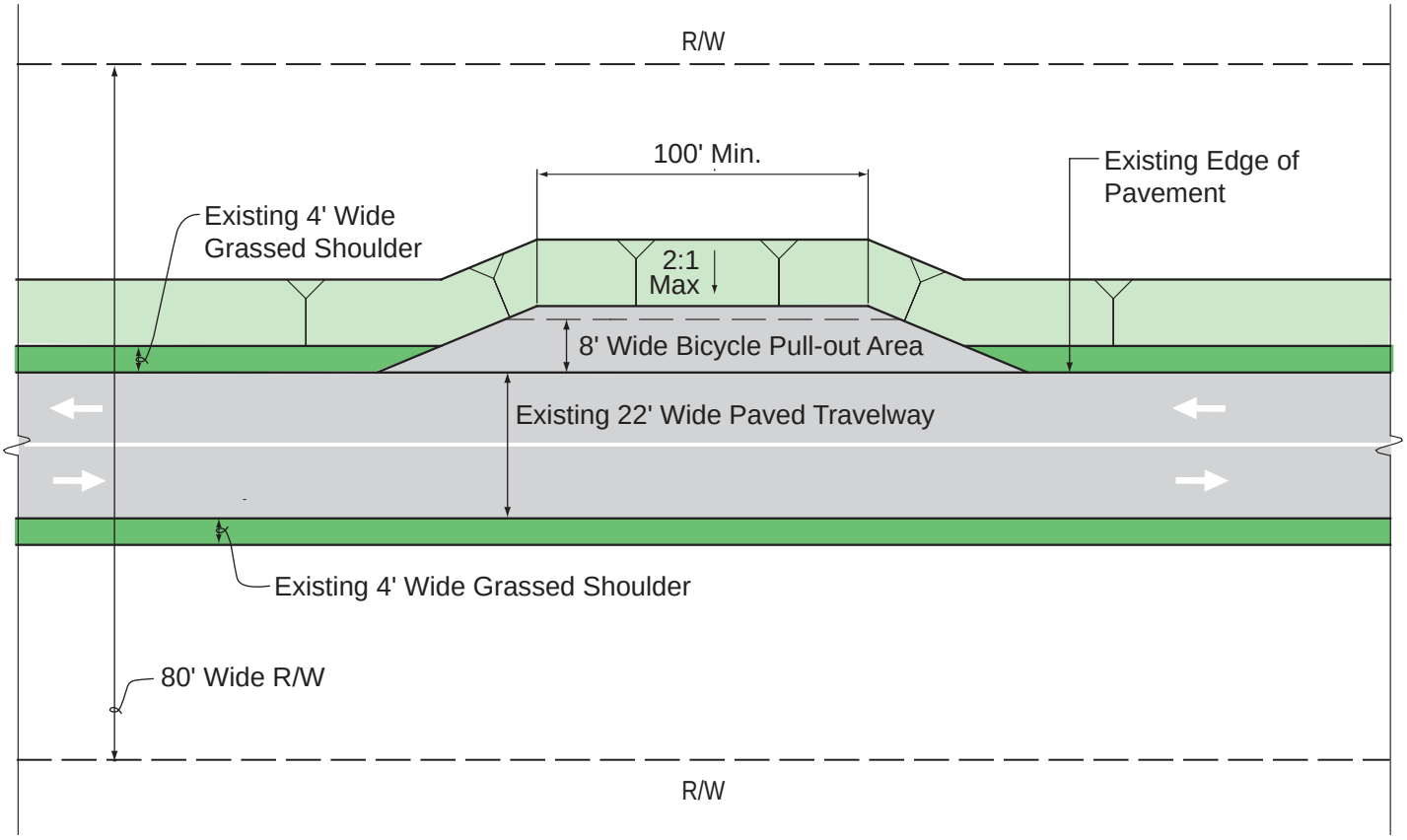
Shoulder improvements would provide space for slower moving vehicles to pull over and allow faster moving vehicles to pass. If a tour group needs to stop, these spaces allow bicyclists to pull over safely, outside the travel lane. Wider shoulders would also allow Maui Police to park their vehicles for monitoring and enforcement purposes.

Impacts

Construction of a typical pull-out area is estimated at $40,000, including excavation, base course, asphalt pavement, signage, and striping. Retaining walls and/or guardrail relocation, required in some locations, would add to the baseline construction cost.

The shoulder improvement projects on Baldwin Avenue would be more expensive, not only because longer segments are involved, but the need for possible utility relocation, drainage improvements, and traffic control. Costs are estimated to range from $200,000 to $470,000. Costs would be lower if shoulder improvements are shortened, essentially providing pull-outs.

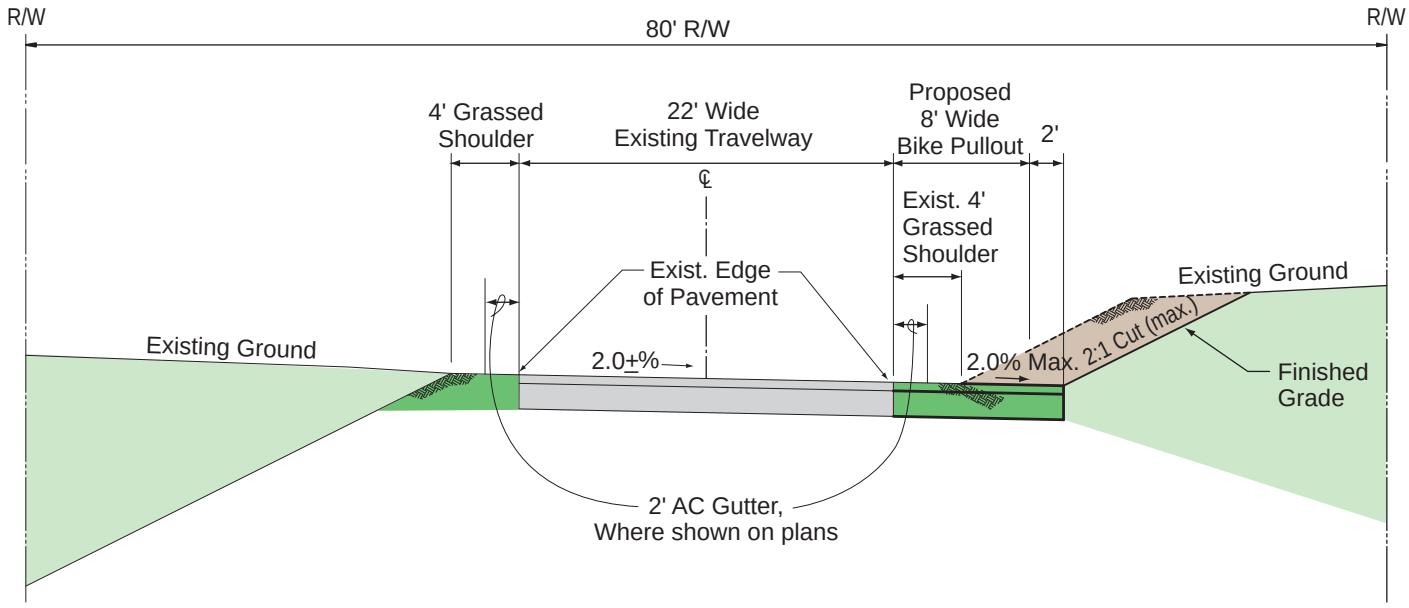
TYPICAL PLAN — PULL-OUT AREA



Notes:
Minimum pull-out length determined to be 100' to store 14 bicycles and 1 van single file. (68" avg. length per bike & 15 pass. van approx. 225" long)

Figure 7
Typical Plan—Pull-out Area

TYPICAL SECTION – 80' R/W (with cut)
(Haleakala Crater Road)



TYPICAL SECTION – 80' R/W (with fill)
(Haleakala Crater Road)

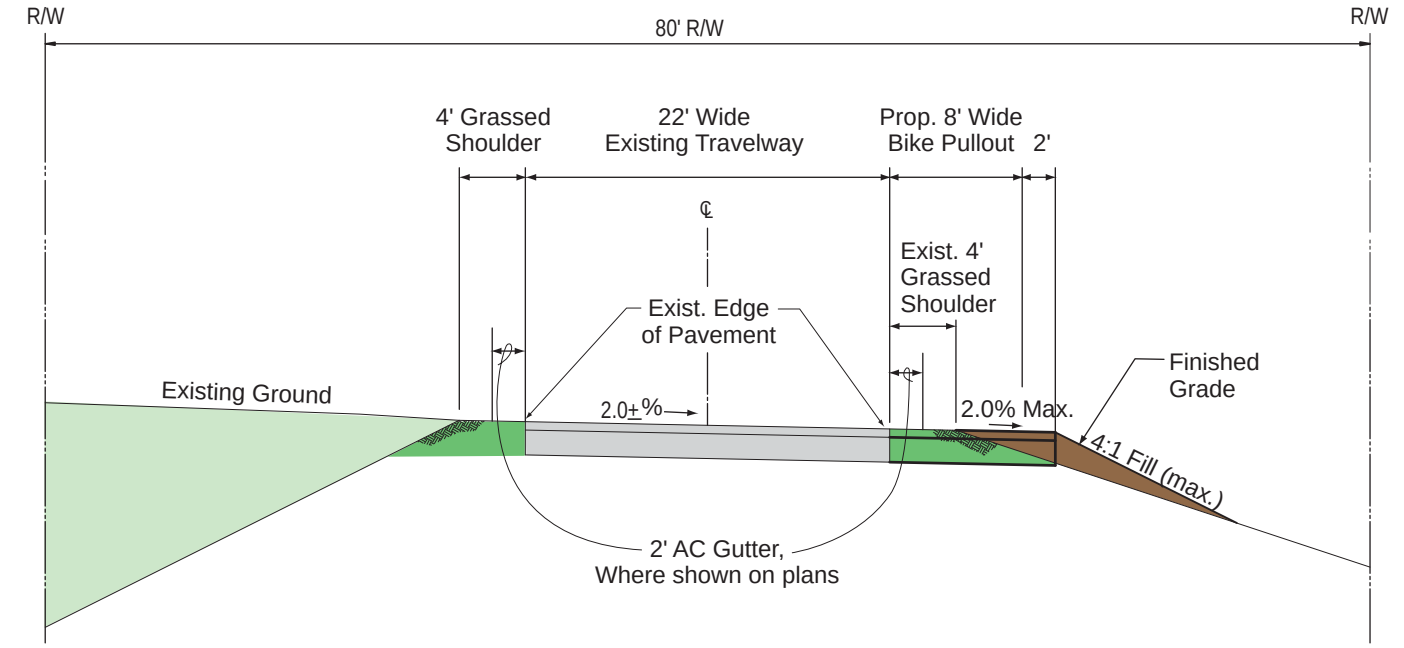


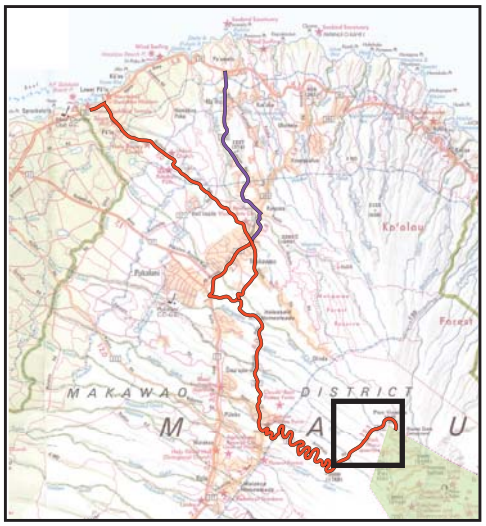
Figure 8
Typical Section—80-foot ROW, w/Cut, w/Fill

LEGEND

EXISTING PULL OUT AREA

POTENTIAL PULL OUT AREA

CULVERT



HALEAKALA RANCH

HALEAKALA RANCH

MILE 10

STAGING AREA

STAGING AREA

ELEVATION 6500

DOWNHILL

MILE 9

HALEAKALA CRATER RD
(ROUTE 378)

WAIALE BRIDGE

PULL OUT AREA

PULL OUT AREA

378 WEST

378 EAST

NORTH

0 100 300 500

SCALE IN FEET

Figure 9a

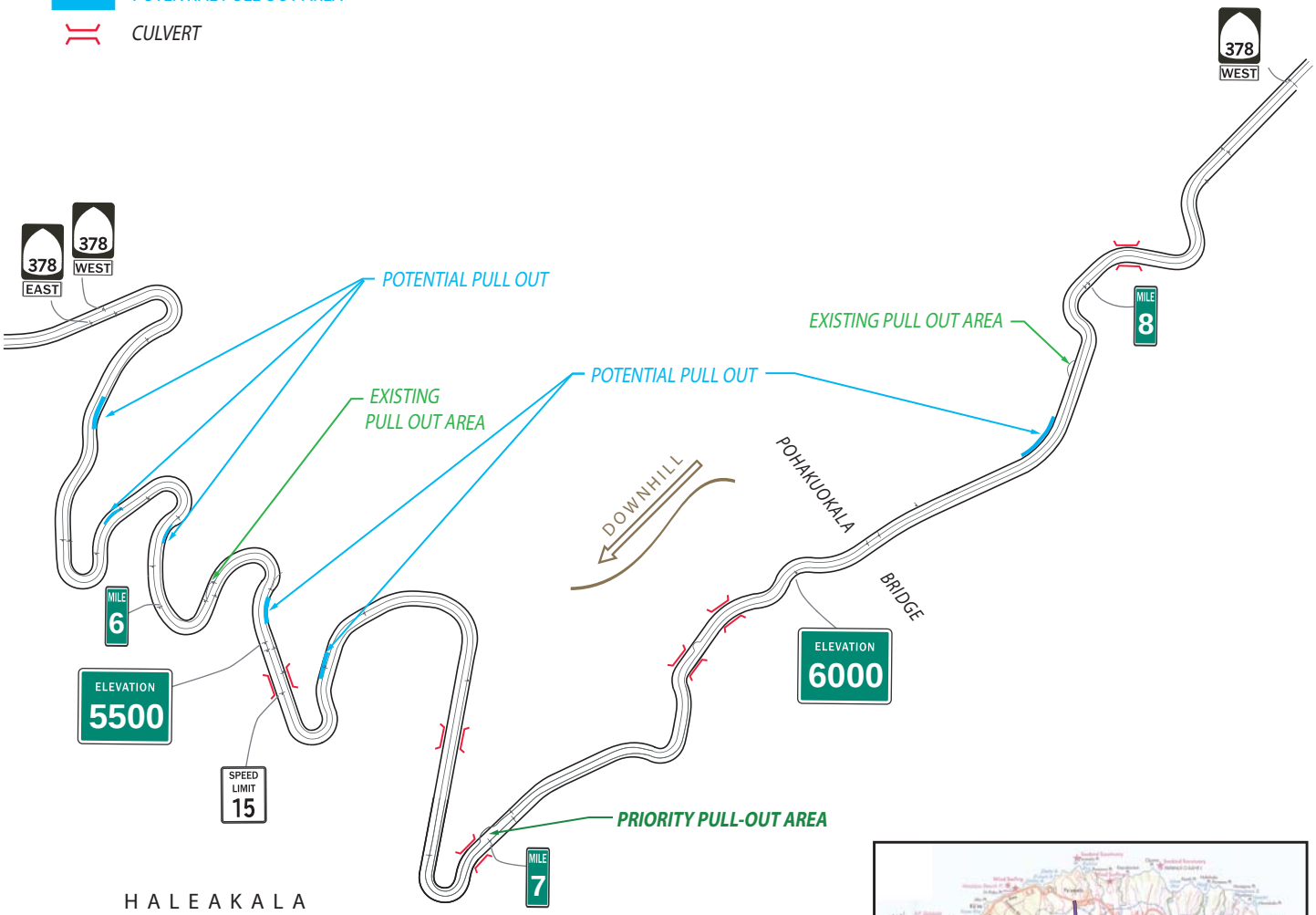
Potential Improvements (Mile 9-10)

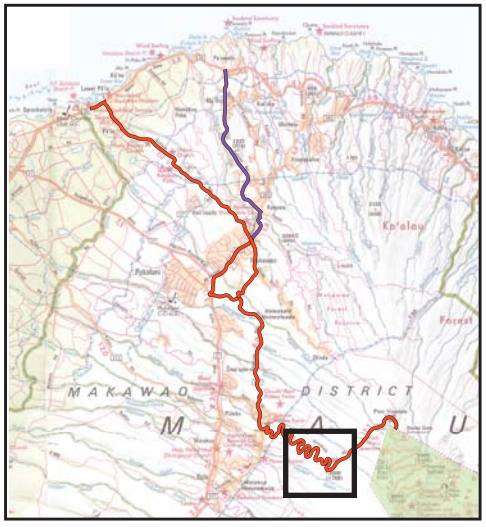
LEGEND

EXISTING PULL OUT AREA

POTENTIAL PULL OUT AREA

CULVERT





NORTH

0 100 300 500

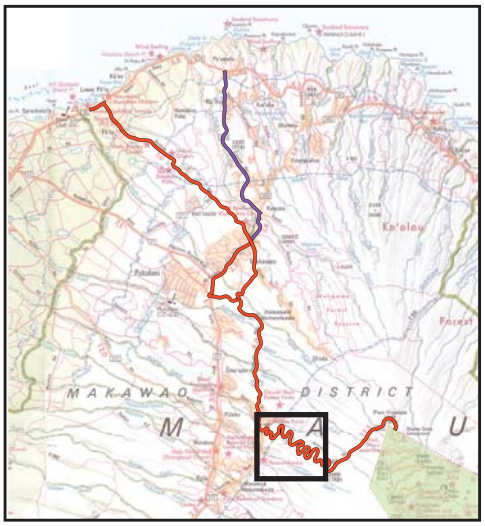
SCALE IN FEET

Figure 9b

Potential Improvements (Mile 6-8)

LEGEND
EXISTING PULL OUT AREA
POTENTIAL PULL OUT AREA
CULVERT

EXISTING PULL-OUT AREA
POTENTIAL PULL OUT AREA
EXISTING PULL-OUT AREA
NARROW PAVEMENT WIDTH ABOUT 28' WIDE (DRAIN CULVERT CROSSING)
ELEVATION 4000
MILE 1
MILE 2
DOWNHILL
EXISTING PULL-OUT AREA
PRIORITY PULL-OUT AREA
EXISTING PULL-OUT AREA
POTENTIAL PULL OUT AREA
MILE 3
SPEED LIMIT 15
SPEED LIMIT 15
SPEED LIMIT 30
EXISTING PULL-OUT AREA
ELEVATION 4500
PRIORITY PULL-OUT AREA
PRIORITY PULL-OUT AREA
MILE 4
EXISTING PULL-OUT AREA
POTENTIAL PULL OUT AREA
ELEVATION 5000
POTENTIAL PULL-OUT AREA
MILE 5
SPEED LIMIT 15
378 EAST



NORTH
0 100 300 500
SCALE IN FEET

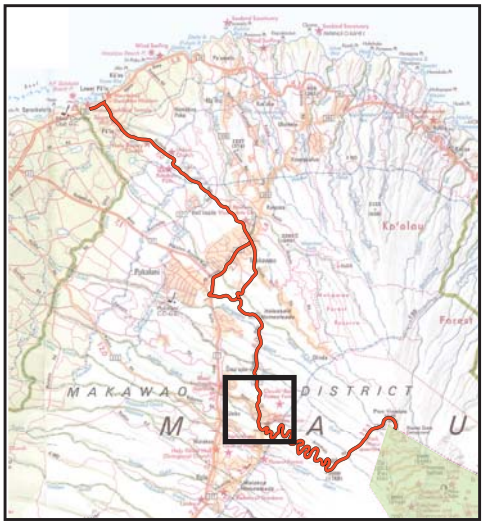
Figure 9c
Potential Improvements (Mile 1-5)

LEGEND

EXISTING PULL OUT AREA

POTENTIAL PULL OUT AREA

CULVERT



EXISTING PULL OUT AREA

LOWER KIMO DR

UPPER KIMO DR

Kula Lodge

SPEED LIMIT 30

AINAKULA RD

DOWNHILL

KUALANI DR

POHAKUOKALA BRIDGE -- NARROW AREA 18' WIDE PAVEMENT WIDTH. 50' R/W WIDTH HAS SPACE TO ADD SEPARATE PEDESTRIAN WALKWAY

POHAKUOKALA BRIDGE

KUALOANO PL

POTENTIAL PULL OUT AREA

EXISTING PULL OUT AREA

377 JCT

Sunrise Protea Market

PALENA PL

PONI MOI PL

ELEVATION 3500

POTENTIAL AREA FOR SEPARATE BIKE PATH/ WIDER SHOULDER

TO KULA KEKAULIKE AVE (ROUTE 377)

SPEED LIMIT 30

TO KAHULUI HALEAKALA HWY (ROUTE 377)

MILE 0

378 BEGIN

POTENTIAL PULL OUT AREA

EXISTING PULL OUT AREA

MILE 1

POTENTIAL PULL OUT AREA

NORTH

0 100 300 500

SCALE IN FEET

Figure 9d

Potential Improvements

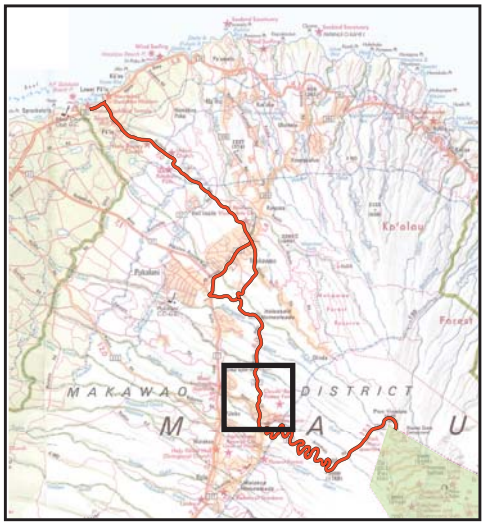
(Mile 1 to Lower Kimo Drive)

LEGEND

EXISTING PULL OUT AREA

POTENTIAL PULL OUT AREA

CULVERT



HALEAKALA HWY
(ROUTE 377)

SPEED LIMIT 30

MILE 4

SPEED LIMIT 30

DOWNHILL

EXISTING PULL OUT AREA

MILE 5

EXISTING PULL OUT AREA

NORTH

0 100 300 500

SCALE IN FEET

Figure 9e

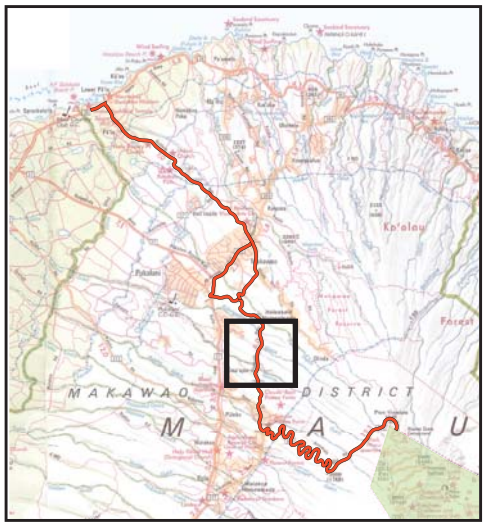
Potential Improvements (Mile 4-5)

LEGEND

EXISTING PULL OUT AREA

POTENTIAL PULL OUT AREA

CULVERT



POTENTIAL PULL OUT

MILE 3

BRIDGE

BRIDGE

SPEED LIMIT 30

DOWNHILL

HALEAKALA HWY
(ROUTE 377)

WAIALE BRIDGE--NARROW AREA 18' WIDE PAVEMENT WIDTH. 50' R/W WIDTH HAS SPACE TO ADD SEPARATE PEDESTRIAN WALKWAY

WAIALE BRIDGE

EXISTING PULL OUT AREA

NORTH

0 100 300 500

SCALE IN FEET

Figure 9f

Potential Improvements (Mile 3)

LEGEND

EXISTING PULL OUT AREA

POTENTIAL PULL OUT AREA

CULVERT

SPEED LIMIT 30

END OF MAUI DOWNHILL COMPANY BIKE TOUR

EXISTING PULL OUT AREA

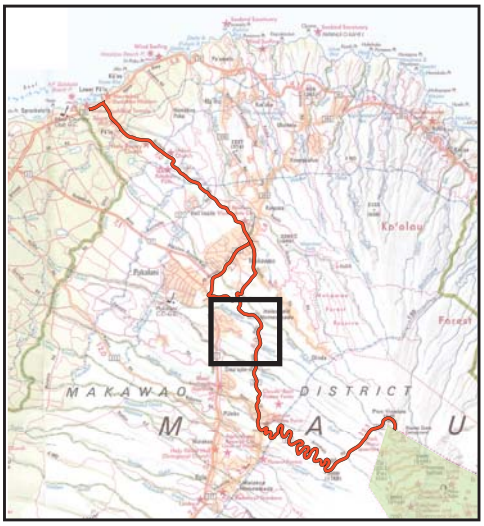
DOWNHILL

MILE 2

SPEED LIMIT 30

SPEED LIMIT 30

ELEVATION 2500



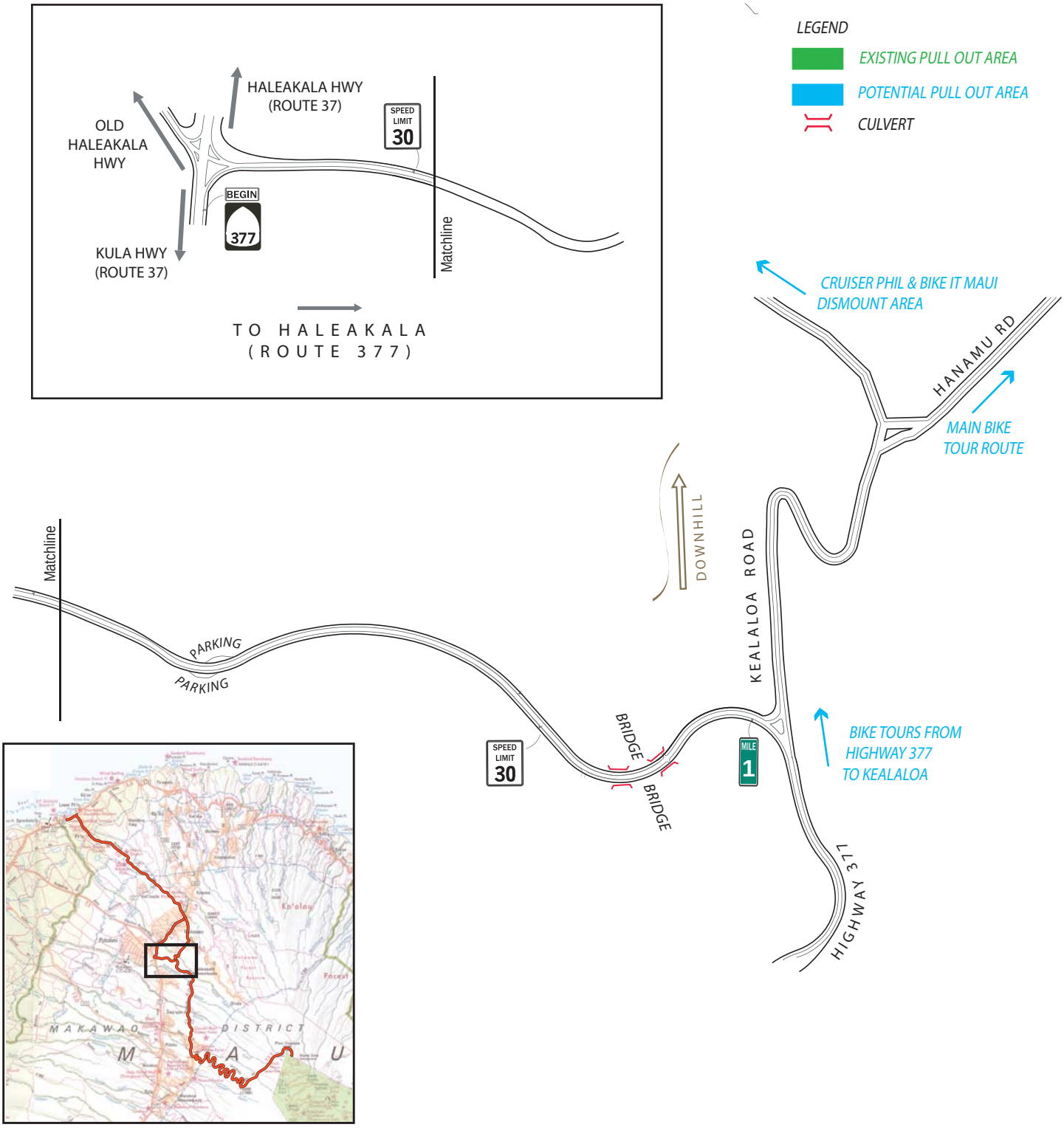
NORTH

0 100 300 500

SCALE IN FEET

Figure 9g

Potential Improvements (Mile 2)



NORTH

0 100 300 500

SCALE IN FEET

Figure 9h
Potential Improvements
(Mile 1 to Hanamu Road)

WIDEN SHOULDER

HALI'IMAILE RD

KALUANUI RD

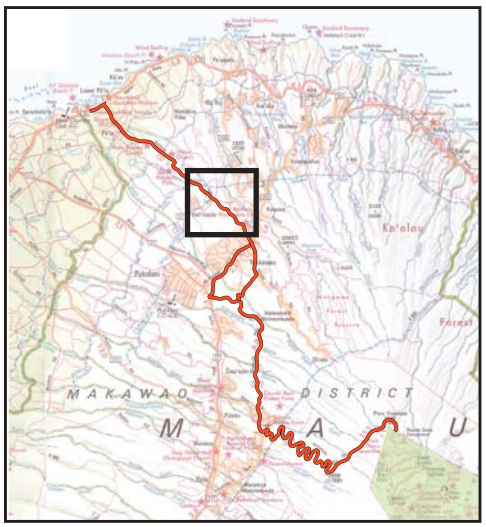
DOWNHILL

MONTESSORI SCHOOL OF MAUI

WIDEN SHOULDER

HUI VISUAL ARTS CENTER

BALDWIN AVE.



NORTH

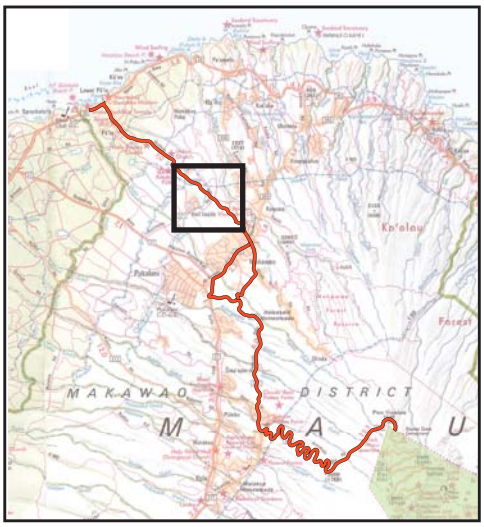
0 100 300 500

SCALE IN FEET

Figure 9i

Potential Improvements

(Baldwin Ave. to Halimaile Road)



MAUI JOB CORPS

IKE DR

WIDEN SHOULDER

BALDWIN AVENUE

SPEED LIMIT 30

DOWNHILL

OHAOHA PLACE

KAMOLE

NORTH

0 100 300 500

SCALE IN FEET

Figure 9j

Potential Improvements

(Ohaoha Place to Ike Drive)

6.1.3 Bridge Improvements

Description

Traffic flow is often constricted in the vicinity of narrow bridges. Bicyclists are correctly instructed to ride in the center of the travel lane if shoulder space is insufficient for bicycles and motor vehicles to travel in parallel. Escort vans frequently pull up behind the convoy to protect riders at these pinch points. This proposal calls for the construction of a separate bicycle/pedestrian bridge adjacent to the existing highway bridge. HDOT has installed these types of bridges in other locations with narrow bridges, such as Kamehameha Highway on the North Shore of Oahu.

Preliminary field investigations have identified 4 locations where footbridges may be feasible: (1) Crater Road crossing Waiale Stream (2) Crater Road crossing Pohakuokala Stream, (3) Haleakala Highway crossing Waiale Stream, and (4) Halaeakala Highway crossing Pohakuokala Stream.

Benefits

A footbridge would separate bicyclists from motor vehicles. The new bridge would benefit pedestrians and runners, as well as bicyclists. Assuming that shoulders are satisfactory on the approach to and beyond the bridges, the need for escort vehicles to follow directly behind the convoy would be reduced.

Impacts

Compared to the typical highway bridge, footbridges are less expensive to construct because of the lighter loads. Nevertheless, the estimated cost of a footbridge is approximately $520,000. This amount includes relocation of guardrails, new signage, and striping.

Pedestrian and bicycle bridge

Cantilevered structure from side of existing bridge

6.1.4 Bike Path Connector from Crater Road to Haleakala Highway

Description This proposal involves construction of a 10-foot wide bike path connecting Crater Road and Haleakala Highway (see Figure 10). The path, approximately 360 feet long, would be located within the existing public right-of-way. Preliminary engineering indicates that there is sufficient room for a two-foot wide clear zone on either side of the path and a landscaping strip up to five feet wide between the path and the road pavement.

Benefits A separate bike path would allow bicyclists to make the right turn from Crater Road onto Haleakala Highway without coming to a full stop at the stop sign. Bicyclists would be able to maintain speed for the slight grade increase on Haleakala Highway after the turn. In contrast, tour participants today are required to walk their bikes through the stop sign to make the curve. From a full stop, it takes riders some time to get back to cruising speed and able to keep up with motor traffic.

Impacts The preliminary cost estimate is $130,000. A major cost factor is a retaining wall to maximize use of the public right-of-way. Costs will be higher if an existing drainage culvert must be modified.

Proposed bike path connector from Crater Road onto Haleakala Hwy

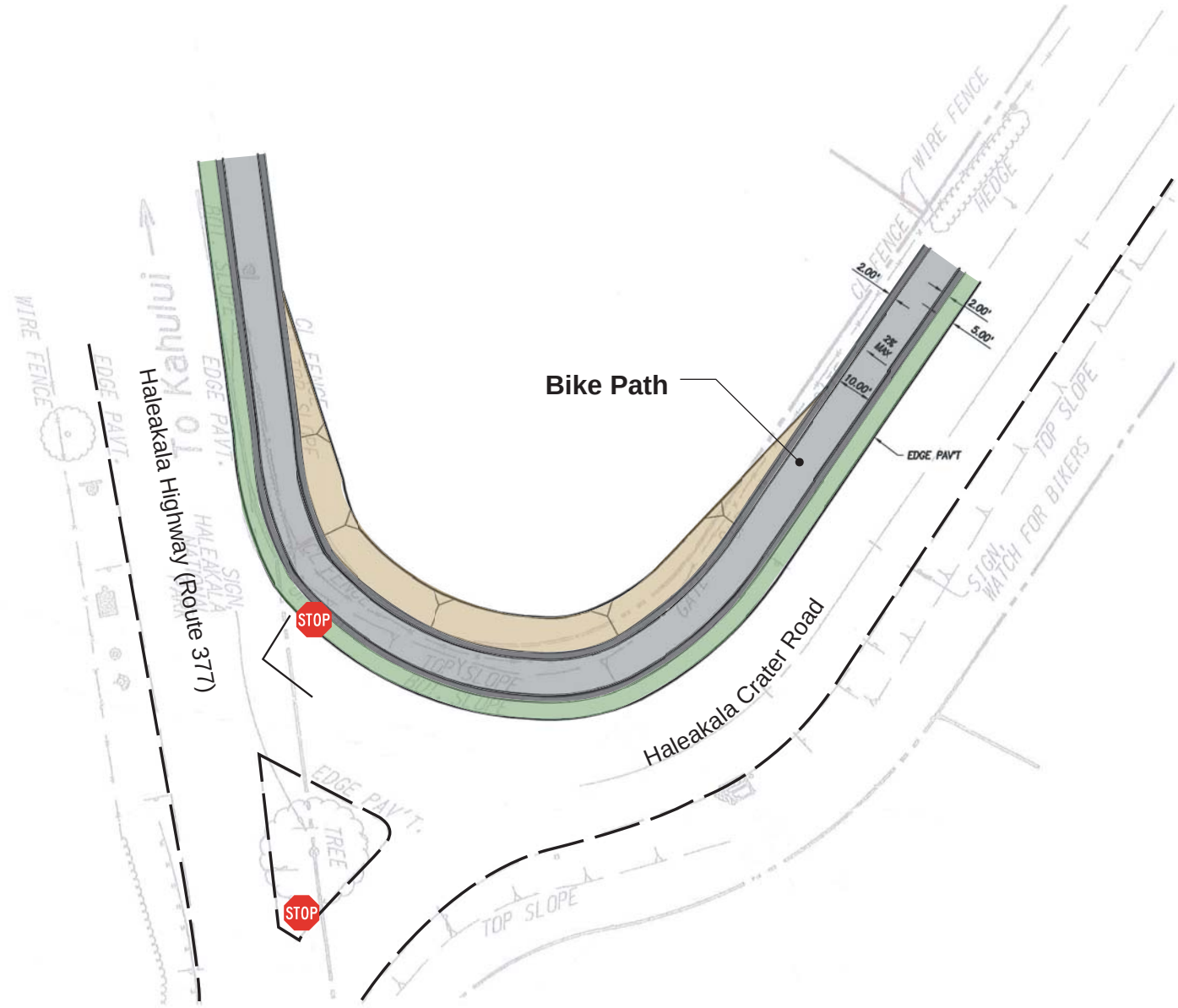


Figure 10

Proposed Bike Path, Intersection of Haleakala Highway and Crater Road

6.1.5 Rest Stops and Scenic Overlooks

Description This proposal would provide off-road areas where bicyclists can safely leave the highway and park their bicycles. Scenic overlooks would allow for resting and regrouping, picture taking, and commentary from the guides.

Benefits These areas are intended for the use and enjoyment of all highway users. For the bicycle tours, formal scenic outlooks would help to regularize rest stops, making it more predictable for motorists to determine where convoys exit and enter the highway.

Impacts Like all public facilities, overlooks and rest stops will need regular upkeep, for example, trash removal and maintenance of landscaping, pavement, and railings.

Scenic lookout with informational sign describing cultural, historical, and ecological features

6.1.6 Baldwin Avenue Shared Use Path

Description In 2000, a plan was prepared to widen or add shoulders to Baldwin Avenue. However, the plan was dropped due to adverse impacts to rainbow shower trees. The County subsequently began planning a shared use path that follows a mauka-makai alignment on the west (Kahului) side of Baldwin Avenue. The path would extend for approximately 6 miles and have a width of 13 feet (6 feet uphill; 7 feet downhill).

Benefits The shared use path would remove guided bike tours from Baldwin Avenue, beginning just below Makawao Town. Although some community members have expressed concerns that the path would be for the bike tours, it is being planned and designed as a facility that enables all segments of the community to travel on foot and by bicycles between Upcountry and the coast. Residents in neighboring areas would have a walking and jogging facility for fitness purposes.

Impacts Costs for land and construction are estimated to require $2.7 million in County bonds and $5.6 million in federal funds. Community support for the path is mixed given the cost of the facility and priorities for bicycle facilities elsewhere. Bike tour operators have expressed guarded support for the project.

6.2 Regulatory Proposals

6.2.1 Close Permit Loophole

Description Amend the language of the Maui County Code so that the existing permit requirement applies to downhill bicycle tour businesses *operating in the county*. As currently written, the law states:

> It is unlawful for any business or person to conduct a bicycle tour on *County property* without first obtaining a bicycle tour business permit issued by the director in accordance with this chapter (italics added). Maui County Code, Chapter 5.22

Benefits By modifying the ordinance, the permit requirement would apply to all businesses that operate downhill bicycle rides down Haleakala. Among the conditions for permit approval are comprehensive liability insurance with minimum coverage of $3

million and a duty to defend the County, if the County is sued as a result of activities by the bicycle tour business. These provisions were enacted by the County Council as a measure of protection against losses sustained and should apply equally to all downhill bike tour operators.

Impacts Costs are likely to increase for tour operators who currently operate without the permit.

6.2.2 Specify Restrictions and Conditions on Use of Roadways

Various proposals have been raised to regulate the operations of downhill bike tours on State and County roads, as discussed below:

6.2.2.1 **Prohibit bicycle tours on certain road segments**. In particular, restrict bicycle tours from passing through Makawao Town and/or Paia Town. Notable trouble spots are the intersection with four-way stop in Makawao, and the Hana Highway intersection in Paia.

Benefits Restricting bicycle convoys would reduce congestion levels already experienced within Makawao Town and Paia Town. In the past, merchant associations in both towns have requested tour operators to stop sending convoys through their commercial districts. Some business owners feel that the bicycle convoys inhibit customers from coming into town during certain times of day.

Impacts The prohibition would mean that tours are stopped outside the Makawao commercial district, where riders would dismount, bicycles loaded onto trailers, and the riders driven through town in the van. Riders could then re-mount on the other side of the commercial district. In the case of Paia, similar procedures could take place, or, more likely, tours would end prior to entering the main commercial district. Although these procedures require extra effort from tour operators, they are being done by at least two companies.

Restrictions would diminish riders' ability to get an up-close look at the quaint charm of small-town Maui afforded by bicycles. Bicycle tour groups rarely stop in Makawao currently, so the prohibition would not have a direct economic impact on the town; however, some visitors return after their initial exposure. Paia is

the end point for many of the guided tours, so opportunities for shopping and dining are less likely to be affected.

Discussion

A compromise is to restrict bicycle convoys through Makawao after the start of business. Depending on when the bicycle tours begin, convoys may pass through before businesses have opened. Because Paia is at the far end of the tour route, most businesses are open by the time bicyclists reach the town.

Baldwin Avenue also has been mentioned as inappropriate for bicycle tours. In general, this road experiences relatively low traffic levels with posted speeds ranging from 15-30 mph. See Section 6.1.2, above, for a discussion on shoulder widening on Baldwin Avenue.

Makawao commercial district

6.2.2.2 **Restrict bicycle tours during certain times of the day**. In particular, establish a "bike free zone" on Haleakala Highway between, say, 7:00 a.m. and 8:00 a.m. when bicyclists on the sunrise tour converge with peak morning traffic.

Benefits Conflicts between bicycle convoys and motor vehicles would be eliminated while a "bike free zone" is in effect.

Impacts For a "bike free zone" to be non-discriminatory, it would affect all bicyclists, including those unaffiliated with a downhill tour.

Discussion The time when the sun rises varies throughout the year; therefore, the time when bicyclists arrive at Haleakala Highway will also vary. During the summer months, there's a greater likelihood of a clash in timing between bicyclists and motorists using the highway. At other times of the year, the peak usage among groups is more likely to occur at different times.

6.2.2.3 **Restrict the number of guided bicycle tours (convoys) allowed.** This proposal would establish a maximum number of guided tours allowed each day. One proposal is a maximum of two sunrise tours and two mid-morning tours per day per company

Benefits Limiting the number of bicycle tours is a tool to manage roadway use among competing users.

Impacts This restriction would negatively affect the guided tour operators, but not the independent tour operators.

Discussion An alternative to capping the absolute number of tours is to regulate the spacing of the convoys (see 6.2.2.4, below).

6.2.2.4 **Regulate the spacing of bike tour convoys**. This proposal would institute a mandatory check-in procedure to control spacing between tour convoys. A common complaint expressed by members of the Upcountry community is the difficulty of passing bicyclists when multiple convoys join together. Even the National Park Service, in its Operations and Safety Plan, required tour departures to be staggered with at least a 10-minute interval between each group.

Benefits Ensuring regular spacing between convoys will mitigate disruptions to the flow of vehicular traffic. Although tour leaders

are conscientious about timing when their group sets off, spacing becomes less regular mid-route as some convoys move faster or slower than others, or groups need to rest to attend to rider or equipment needs.

Impacts

Mandatory check-in procedures would work only if all guided tour operators participate and comply with the system rules. A cooperative system would include one or more check-in station and a standardized set of procedures to maintain order.

Discussion

Table 6 shows hypothetical scenarios under conditions in which bicycle convoys are spaced in intervals of 5 minutes or 10 minutes. On Crater Road, where bicyclists are posited to travel at an average speed of 8.5 mph through the switchbacks, a car traveling at 30 mph would encounter a convoy approximately every 0.7 mile or 1.4 minutes. With a 10-minute gap between convoys, the same car would encounter a convoy every 1.4 miles or 2.8 minutes.

Along a stretch of roadways where bicyclists are traveling faster, say an average of 20 mph along Haleakala Highway, a 5-minute interval would mean that a car traveling at 30 mph would encounter a tour group approximately every 1.5 miles or 3.0 minutes. With 10 minutes between convoys, encounters would stretch to approximately every 3.2 miles or 6.4 minutes.

Table 6. Convoy Spacing Calculations (Scenarios)

Average Speed of Convoy	Spacing Interval between Convoys	Distance between Convoys	Time Interval between Convoys for Car Driving at 30 mph
8.5 mph (Crater Road switchbacks)	5 minutes	0.7 mile	1.4 minutes
	10 minutes	1.4 miles	2.8 minutes
20 mph (Haleakala Hwy)	5 minutes	1.5 miles	3.0 minutes
	10 minutes	3.2 miles	6.4 minutes

Tour groups stagger start times, but do not always maintain separation for the entire trip

6.2.2.5 **Restrict the size of convoys (number of riders per tour)**.

Discussion Currently, guided tours have a maximum of 13 riders and a cruise leader. This number correlates with the 15-person capacity of the vans being used (13 riders + 1 guide + 1 van driver). The National Park Service, under its Commercial Use Authorization, established 14 as the maximum tour size. This proposal would reduce the maximum size of each tour to 10 participants.

Benefits Reducing the size of the tour group would make it easier for vehicles to go around the bicycle convoy.

Impacts Tour operators report that the economics of their business is heavily dependent on their ability to operate at van capacity. Because vans are not always filled, especially during recessionary times, it is important to maintain the 13-rider tour size to offset less profitable runs.

6.2.2.6 **Regulate the qualifications of participants by age, height, weight, and/or skill level**.

Discussion The intent of this proposal is to reduce injuries and fatalities among tour participants. As shown in Chapter 3, the profile of bicyclists involved in accidents is highly variable. Because it is in the tour operators' interest to create the conditions for a safe, enjoyable ride, all of them have screening criteria to evaluate participants. Ultimately, riders who might be at risk are best detected by observation. Experienced cruise leaders are able to spot weak or problematic riders—anyone "riding out of their ability." Decisions about who can or cannot participate in the downhill ride should continue to be made internally. However, all riders should be tested before starting on the downhill descent. When the tours began in Haleakala National Park, the Visitor Center parking lot was used as a test riding site. Because the current launch area is too small for this purpose, riders should be tested at the baseyard to ascertain riding ability.

6.2.2.7 **Require the mandatory use of pull-outs by escort vans and trailers**. There are two main variations of this proposal. One is to require escort vans and trailers to pull-over at the earliest opportunity when vehicles begin to line up behind them. This is the condition imposed by the National Park Service. Another variation, sometimes called the "leapfrog system," is to require escort vans and trailers to move from pull-out area to pull-out area, rather than shadowing the convoy and pulling over only when vehicles begin to stack up. Under the leapfrog system, escort vans may follow directly behind the convoy in certain limited situations, such as sections with sharp turns and restricted sight distances or narrow bridge crossings, where convoys may be more exposed. For the most part, however, slow-moving vans and trailers would not "block" traffic, but travel at posted speed levels as they jump from one pull-out to the next.

Benefits The strategic use of pull-outs can facilitate traffic flow and reduce inconvenience to motorists stuck behind slow-moving vehicles. The addition of posted signs that say "Mandatory Pullover for Trailers in XXX Feet" would alert motorists to a passing opportunity ahead.

Impacts Some tour operators already employ the leapfrog system. However, others do not and will have to re-tool their operations if the use of pull-outs becomes mandatory. The number, location,

and size of pull-outs would have to be analyzed to ensure that all escort vehicles can be accommodated.

Some tour operators firmly believe that strategic use of vans is needed to protect riders. Specific locations include bridges with little or no shoulders that become "pinch points" along the route, sections with curves or limited sight distance, and uphill grades that slow down bicycling speeds.

Discussion A related proposal is to require company personnel on bicycles at both the front *and back* of the convoy. Currently, all tours have a professional guide on bike only at the front of the line. The question is whether company personnel as the last rider would eliminate the need for a tailing escort van. When asked, tour operators felt that two employees on bicycles was an unnecessary cost. Some tours have the last rider wear a distinctive vest.

6.2.2.8 **Require speedometers on the cruise leader's bicycle.** The speedometer would be part of a program to limit bicycle speed to a pace that is manageable for safe control of bicycles, particularly when negotiating turns.

Benefits Reducing excessive speeds that require participants to keep up a pace that may be too fast for their ability to safely control a bicycle while negotiating a turn.

Impact Effective control of bicycle speeds would need to be coordinated with an initiative to establish safe speeds under various route conditions, and cruise leader training.

Discussion Attaching speedometers to all bicycles may serve as group control.

6.2.3 Develop a Credentialing and Oversight Program

This proposal involves the creation and operation of a program to reinforce industry standards. "Credentialing and oversight" are used conceptually; designing a specific program would require further consideration and discussion. The program could encompass a range of activities and responsibilities. One program element might be training and education to foster optimal operations with employees required to demonstrate a prescribed level of competency. Another program element might involve periodic inspections to check whether documented procedures are being followed or to check whether equipment meets safety specifications. Enforcement is another possible element; the ability to issue warnings, citations, and penalties (such as temporary suspensions or revocation of permit). In such a program, the County (or authorized entity) would essentially take over much of the functions that were performed by the National Park Service prior to the stand down.

Personnel: The proposal for an employee credential program would involve qualifying drivers and guides, standardized training to disseminate and inculcate best practices across the industry, and provide a system of incentives and/or penalties to sustain desired levels of performance over time.

Under the conditions of the National Park Service's Commercial Use Authorization, bike tour operators participated in training programs run by the Service and each crew was required to have at least one person credentialed by the Red Cross with first responder qualifications. With bicycle tours currently unable to operate in the park, the NPS influence over, and oversight of, training and personnel qualifications is also in hiatus. See also, Section 6.3.3, Best Practices Manual.

Equipment: An oversight program for equipment would ensure that safety equipment is available and that riding equipment is well-maintained and functioning properly. The program could include regularly scheduled inspections and/or random, spot inspections. The NPS case log, reports numerous vehicular violations, including defective lights; expired registration; expired safety checks; bald tire; unmounted, uncharged, or inaccessible fire extinguishers; and lack of seat belt.

Benefits

An industry-wide credentialing program would help to set minimum standards of professionalism in conducting the downhill bike tours. Inspection of tour bicycles and motor vehicles would serve as backstops to the companies' in-house maintenance efforts.

Impacts

Significant organizational resources would be required to set up and operate a credible, long-term program. The program will also require financial resources, which could be considerable. Bike tour companies would be expected to cover the costs and some expenses could be transferred from in-house programs to the external credentialing program—however, it's unlikely that a company would be able to eliminate all internal functions, such as training. To some extent, the program would add a new layer of costs for the tour operators.

Another significant impact is the possibility that becoming involved in credentialing and equipment inspections would increase the County's exposure to liability in future lawsuits. A third party would be similarly affected.

6.2.4 Data Collection

Description

Collect information on tour operations, such as data on the number of tour groups, number of tour participants, number of accidents, and the disposition of accident cases.

Benefits

A formal data collection process would enable more accurate tracking of the industry. Public policy should be based on statistics, rather than perceptions.

Impacts

To be effective, data collection must be part of a system that collects, organizes, analyzes, and reports the information.

Discussion

Basic information is already collected as part of the bicycle tour business permit, including: applicant contact information; description of the areas, locations, or routes to be used; description and registration numbers of all monitor vehicles and bicycles to be used; and description of structures to be used by the business. The National Park Service also collects some information for the Commercial Use Authorization. Barring privacy rules, information sharing among governmental agencies can provide the foundation for an information database. The existing ordinance allows for additional information to be collected could be made a part of the County's permitting process. But the collection of additional information should be clear about its purpose and use.

6.2.5 Surcharge Fee per Bicycle

Description Establish a special purpose fund to be administered by the County that would fund any credentialing, monitoring, or enforcement program specific to the downhill bike tours. The fund would be supplied by a surcharge fee on each bicycle that is part of a commercial downhill tour group, whether escorted or independent.

Benefits Fees would provide an income stream that could be used to fund proposed improvements, operation and maintenance costs, and program costs.

Impacts A special purpose fund will require County authorization. An administrative structure is needed to collect, manage, and disburse the funds, with administrative rules to provide guidance.

Fees will affect the cost structure of the bicycle tours, either in terms of higher prices or lower profit margins. Any surcharge should be applied across the board so that all operators are affected equally.

6.2.6 Mandatory Drug and Alcohol Testing

Description Institute a drug and alcohol testing policy for bike tour employees in safety-sensitive positions. The program may be administered by a qualified third party, but would be consistent with protocols and procedures used in similar workplace situations and with proper fairness safeguards.

Benefits Mandatory drug and alcohol testing would create an environment that enhances the safety and health of clients, co-workers, and the general public.

Impacts Employers would incur increased costs and need to set up an appropriate human resources context for notification, testing, addressing violations, and confidentiality and privacy.

Discussion Most tour operators interviewed would not oppose mandatory testing; however, they also feel that job conditions—specifically, the early wake-up call day after day and close, small-group interaction—are better indicators of employee fitness.

Tour operators can also reduce accident risk by making sure that prospective clients know that use of prescription and over-the-counter drugs can impair their ability to safely descend Haleakala. Even use of medication for colds and motion sickness can cause drowsiness or inattentiveness. Similarly, lack of sleep the night before can result in suboptimum physical fitness. Cautions should be stressed in all promotional literature and all participants made fully aware of the risks when signing a waiver or acknowledgement of risk.

6.3 Non-Regulatory Proposals

Non-regulatory proposals are essentially voluntary efforts to improve safety and courtesy on the road. These proposals cover actions on the part of the bike tour industry and the community. This category also includes enforcement of existing laws.

6.3.1 Identify Vans and Trailers

Description Attach company name and phone number so they are clearly visible from the side and rear of vans and trailers.

Benefits The ability to identify company owners would facilitate community relations and reduce the perception by some local residents that tour companies are masking poor road etiquette behind anonymous vehicles.

Impacts Tour operators would incur expenses to attach signs or decals on all vehicles.

Discussion The PUC requires all commercial carriers to identify vehicles, but current markings are not always visible. A further consideration is whether bicycles should have identifiable markers.

6.3.2 Complaint Hotline and Follow-up

Description Provide a hotline where complaints can be made and direct complaints to the responsible party for response and/or corrective action. The hotline could also serve as a clearinghouse to track accidents.

Benefits A hotline would provide a central contact point to report illegal or improper actions. A log would provide a means of tracking the number, frequency, and nature of community complaints.

Impacts Personnel resources would be required to monitor the line and follow up.

Discussion The industry has experimented with a hotline in the past. While briefly in operation, it was not utilized as much as expected. Reasons for the lack of response are unclear.

Safety briefing before the tour launch

6.3.3 Best Practices Manual

Description Develop a "best practices" manual that would establish industry standards for safe, consistent, and courteous interactions with other highway users. For example, in the case of guided tours, best practices would specify the actions of escort vehicles, including when and where they may follow the convoy, and how escort vehicles and convoys should respond when other vehicles begin to

back up. The manual would address conduct perceived as offensive or egregious by host communities, for example, littering, showboating by cruise leaders, and van drivers instructing motorists to pass. It would also contain a safety plan with practices to minimize risk, report accidents and property damage, and procedures for following up.

Benefits The Best Practices Manual is conceived as a negotiated document to be developed with input from the downhill bicycle industry and the community. It would document a compromise that meets the needs of both sides. The community benefits by having a set of standardized expectations about how the tours operate and the knowledge that tours are being conducted in a way that minimizes hazards and inconvenience. The industry benefits by having a set of voluntary guidelines.

Impacts Because the Best Practices Manual is voluntary, the lack of external accountability and consequences may be a weakness. Even with good intentions, maintaining standards over the long-term can be challenging.

Discussion For a Best Practices Manual to be sustainable, the practices must be internalized. It is incumbent upon the industry to make sure that employees are fully trained, and that new tour operators also adopt the practices.

6.3.4 Safety Video

Description Develop a safety video to be shown in the van on the way up Haleakala, similar to videos used by airlines.

Benefits Video images would supplement current safety briefings held at the baseyard before the van trip begins. Any number of issues can arise so that tour participants are not fully briefed about safety issues: written information distributed for reading in dark vans (those on the sunrise tour), rushed presentations for tour participants who arrive late, language difficulties among foreign participants. Videos present information in a largely non-verbal format. They allow extended coverage of certain types of information—using footage from the route itself to preview conditions, demonstrate what to do or NOT do, and how to deal with emergencies.

Impacts Tour companies will need to prepare an instructional video and may need to outfit their vans with viewing equipment.

Discussion To the extent that best practices are adopted, generic video sequences could be produced for use by more than one company. Unlike airline safety videos that are largely ignored by seasoned travelers, the bike safety video would be watched because it will be a first-time experience for most riders. Tour participants undeniably receive a large amount of written do's and don'ts—the question is whether the information could be disseminated in more effective formats.

6.3.5 Scenic Byway

Description Designate and develop Crater Road (Hwy 378) and Haleakala Highway (Hwy 377) as a scenic byway.

Benefits Special signage associated with the designation would alert motorists that this scenic route is intended for leisure travel, so to expect slower speeds.

Impacts A designated scenic byway would attract more visitors to the area. There may be development pressures to provide commercial services that have secondary impacts on residential communities and local traffic conditions.

Discussion The State Department of Transportation is in the exploratory stages of a statewide scenic byway program. Actual implementation requires organized local support to nominate a scenic byway and provide the means of maintaining the designation. Local sponsors can be organizations interested in promoting the economic development potential of a scenic route and/or preserving the unique visual, historic, and cultural qualities of the particular transportation corridor.

Distinctive signage for the California scenic byway program. Hawaii has not yet instituted an official scenic byway program, but is evaluating candidates for a pilot program.

6.3.6 Directional Signs for Bicyclists

Description This proposal calls for signage and pavement markings to help bicyclists find their way along Upcountry bicycle routes.

Benefits Distinctive directional signs are intended to prevent bicyclists from getting lost. While getting lost and seeking local assistance can be part of a rewarding bicycling experience, it is also recognized that downhill biking equipment is heavier than touring models and less accommodating if reversing course means an uphill climb.

Impacts Appropriate approvals are needed for signs to be posted on public or private property.

Discussion If the scenic byway program is pursued, signage for touring vehicles and bicycles should be coordinated.

6.3.7 Increase Police Enforcement of Existing (and Future) Traffic Laws

Description This proposal calls for increased enforcement of traffic violations through increased police presence and patrols.

Benefits More intensive enforcement of existing traffic laws is expected to reduce traffic violations and unsafe maneuvers by motor vehicles and bicycles.

Impacts Increasing police patrols in the tour area would divert limited law enforcement resources from other duties and locations.

Discussion A representative of the Maui Police Department mentioned various enforcement challenges. In the case of violations by bicyclists with tour groups: Who should be cited? the tour company? tour participants? How will they be penalized? Existing traffic laws are adequate for the typical bicyclist, but the problem is enforcing bicyclists traveling in groups.

6.3.8 Install Electronic Speed Monitors

Description Install electronic speed monitors to encourage public compliance with posted speed limits on Haleakala Highway. Speed monitors increase drivers' awareness about speed levels. For the program to have long-standing results, however, police support is also needed.

Benefits Compliance with speed limits would increase safety for all highway users. Given the rural environment, sidewalks are rare in Upcountry communities. People of all ages use the highway right-of-way, including pedestrians, joggers, runners, dog-walkers, wheelchair users, and bicyclists.

Impacts There are costs to acquire and install electronic monitors. One concern is that adding signs to Haleakala Highway would contribute to visual pollution.

Discussion A three-mile stretch of Kuhio Highway, on the east side of Kauai, had experienced a number of major accidents. In response to community concerns, HDOT lowered the speed limit from 50 mph to 40 mph, installed electronic speed monitors, and posted signs notifying motorists of active patrols by local police. The result of the public awareness campaign, supplemented by strategic police enforcement, has been a marked decrease in speed levels.

Examples of electronic speed check signs

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7. Assessment and Recommendations

7.1 Assessment

Like all good public policy, decisions about how to improve the conditions under which downhill bicycle tours are conducted should be made in a way that balances beneficial outcomes and adverse impacts. The study authors assessed the benefits and impacts based on an analysis of the empirical data, in-depth discussions with stakeholders, feedback obtained through public meetings, and examination of related documents and media accounts.

Benefits were assessed at four levels: high, medium, low, and unknown. Impacts were assessed in terms of implementation requirements—first, the need for organizational resources and, second, the need for financial resources. The impacts or costs—organizational and financial—were assessed at three levels: high, medium, and low.

Benefits

High	Favored by community and industry Significant improvement in traffic flow and safety
Medium	Favored by community, but not industry Favored by industry, but not community Some improvement in traffic flow and safety
Low	No position by community and industry Marginal improvement in traffic flow and safety
Unknown	Insufficient information

Impacts-Organizational Resources

High	Requires creation of new governmental or non-profit entity
Medium	Requires modification of governmental entity and/or activities
Low	Requires little or no organizational resources

Impacts-Financial Resources

High	Requires significant funding
Medium	Requires moderate funding
Low	Requires little or no funding

Proposal	Benefits	Impacts-Organizational Resources	Impacts-Funding
Physical Improvements			
Staging areas	H	L	M
Shoulder widening and pull-outs	H	L	M
Bridge improvements	H	L	H
Bike path connector	H	L	M
Rest stops and scenic overlooks	M	L	M
Baldwin Ave shared use path	H	L	H
Regulatory Proposals			
Close permit loophole	H	L	M
Roadway restrictions			
• Prohibit tours on certain road segments	H	L	M
• Restrict bicycle tours during certain times	M	L	H
• Restrict number of tours allowed	H	L	H
• Regulate tour group spacing	H	L	L
• Restrict size of tour groups	H	L	H
• Regulate qualifications of tour participants	Unknown		
• Require mandatory use of pull-outs	H	L	L
• Require speedometer for cruise leader	H	L	L
Develop credential/monitoring program	H	H	H
Data collection	M	M	M
Surcharge fee	H	H	H
Mandatory drug and alcohol testing	M	M	M
Non-regulatory Proposals			
Identify vans and trailers	M	L	L
Complaint hotline	M	M	M
Best practices manual	M	M	L
Safety video	M	L	L
Scenic byway	M	H	H
Directional signage for bicyclists	L	L	L
Increase police enforcement	H	H	M
Install electronic speed monitors	M	L	M

The proposals were assigned to priority categories based on the combination of benefits and impacts (see 3-by-3 table, below).

Proposals expected to yield high or medium benefits with low impacts, and high benefits with medium benefits are considered priority proposals for **short-term implementation**.

Proposals with low benefits with low impacts, and medium benefits with medium impacts may be worth pursuing, but are not considered high priority initiatives and, therefore, categorized for **mid-term implementation**.

Proposals with low or medium benefits, but medium or high impacts should be **eliminated**, and attention given to proposals that are likely to produce better results and are more feasible to implement.

Proposals with high benefits and high impacts carry high costs and/or are likely to be more controversial. These proposals merit additional public discussion and **further consideration**.

	Low Benefits	**Medium Benefits**	**High Benefits**
Low Impacts Low/Low	Mid-term Implementation	Short-term Implementation	Short-term Implementation
Medium Impacts Low/Med Med/Low	Eliminate	Mid-term Implementation	Short-term Implementation
High Impacts High/Med Med/High High/High	Eliminate	Eliminate	Further Consideration

7.2 Recommendations

The table below summarizes the recommendations of this study.

Physical Improvements	Regulatory Proposals	Non-regulatory Proposals
Short-term Implementation (High Priority)		
Staging areas Shoulder widening/pull-outs Bike path connector	Close permit loophole Prohibit tours on certain road segments Regulate tour group spacing Require mandatory use of pull-outs Require speedometer for cruise leader	Identify vans/trailers Safety video
Mid-term Implementation		
Rest stops/scenic overlooks	Data collection Mandatory drug/alcohol testing	Complaint hotline Best practices manual Directional signage Install electronic speed monitors
Further Consideration		
Bridge improvements Baldwin Ave. path	Restrict number of tours allowed Restrict size of tour groups Develop credential/monitoring program Surcharge fee	Increased police enforcement
Eliminate		
	Restrict bicycle tours during certain times Regulate participant qualifications	Scenic byway

Short-term Implementation (Priority)

A number of physical improvement projects are recommended as high priority projects, including staging area(s), shoulder widening, pull-outs, and the bike path connector. These projects would maximize usable space within the existing right-of-way. Improving roadways would facilitate shared use among different users. These projects will require public funds, but are eligible for substantial contributions from federal sources.

Closing the permit loophole in Sec 5.22.020, Maui County Code is a housekeeping matter that should be addressed in the short term. The ordinance should apply to downhill bike tour companies across the board, all of which utilize public facilities and resources.

Four regulatory measures are especially feasible for implementation in the short term. (1) Prohibit tours on certain road segments. This recommendation is to disallow the use of State and County roads by bicycle convoys in the main commercial districts of Makawao and Paia during business hours. Roads in these areas are congested with motor vehicles on the roadways themselves, vehicles entering and exiting driveways, and vehicles entering or leaving street-side parking stalls.

(2) Regulate tour group spacing and (3) Require mandatory use of pull-outs are both initiatives that would ease bicycle-vehicle conflicts. These proposals will require more systematic use of practices that are already being used on a sporadic basis and can be accomplished with fairly simple technology, such as a punch clock. However, cooperation is needed among the tour operators, and it may be necessary to add regulatory language to the County Code to obtain long-term compliance.

(4) Require speedometer for the lead bicyclist is a proposal to control speed by providing critical operational information to the cruise leader. The speedometer should be used in conjunction with rules about safe speeds for each segment of the route.

Non-regulatory proposals are actions that may not be required by law, but demonstrate a willingness to foster good community relations. In that spirit, bike tour operators should identify their vans and trailers so that company names are visible from the rear. Identifying bicycles would also help the public understand who is doing what in their neighborhoods. The safety video is an effective means of communicating important information on bicycling safely and the State's rules for legal and responsible bicycle operation. The expense of producing the video and installing viewing equipment would be relatively small on a cost-per-viewing basis.

Mid-term Implementation (+5 Years)

Rest stops and scenic overlooks are recommended for implementation in the mid term, defined as five years or more in the future. These facilities offer benefits not only to bicyclists, but others traveling on Crater Road. However, they do not address immediate

safety and traffic concerns. An exception would be any rest stop needed to regulate spacing between tour groups, which is a high priority proposal.

Two regulatory proposals are recommended for mid-term implementation. One is to collect additional data from tour operators as part of the permit application process. Pertinent data include number of participants and number of accidents during the previous year. However, data collection should be embedded in an organizational context where the data have meaning and purpose. Another proposal is mandatory drug and alcohol testing for van drivers and cruise leaders—employees in positions affecting health and safety. While testing may be beneficial, employers appear to be addressing this issue without a public mandate.

Also recommended for mid-term implementation are four non-regulatory proposals. The complaint hotline has a lower priority because of poor response during a previous trial. Moreover, with vans, trailers, and bicycles clearly identified (a high priority proposal), those with complaints should be encouraged to direct their concerns to the company involved.

Although the Best Practices Manual is categorized as a mid-term proposal, some of the priority proposals—tour group spacing and mandatory use of pull-outs—depend on a consensus about best industry practices. At the same time, a compilation of best practices, in and of itself, would not alter behavior without a system of incentives.

Directional signs and electronic speed monitors are relatively low-cost items, but are not expected to yield the level of benefits warranting priority attention. Electronic speed monitors can be very effective, but need to be coordinated with increased police enforcement.

Proposals Needing Further Consideration

Proposed bridge improvements and the Baldwin Avenue path represent a set of improvements that would create off-road facilities for bicyclists and pedestrians. Facilities that provide separate travel ways for non-motorized modes of transportation are very effective in improving safety and reducing impediments to the flow of motor vehicles, but they can be costly, which puts them in this category.

Four regulatory proposals should receive further consideration. Instead of restricting the (total) number of tours allowed, a preferred option is to regulate the spacing of tour groups, which essentially puts a cap on the number of tours that can be accommodated (per hour) during peak periods.

Similarly, the proposal to restrict the size of tour groups (decreasing the number of participants from 13 to 10) is recommended for further consideration because of the potential for significant adverse impact on tour operators. Unlike other recommendations

that require operational modifications, the size of tour groups affects the intrinsic economics and viability of these businesses.

Developing a credential/monitoring program and the surcharge fee are among the most intensive regulatory proposals—not only for the downhill bicycle tour industry, but also for the County. These proposals require new administrative responsibilities and rule-making and need additional discussion to determine whether the County wishes to proceed in this direction.

Eliminate

Two proposals are recommended for elimination from further consideration. The proposal to restrict bicycles tours during certain times entails a "bike free zone." The bike free zone was considered specifically for Haleakala Highway between Crater Road and Upper Kimo Drive. Unlike Makawao Town and Paia Town, this section of Kula does not have the same density of commercial activity, and experiences a distinct traffic peak. A proposal to restrict bicyclists is complicated by the varying times when such a restriction would be effective. Moreover, recreational bicyclists also opposed this proposal because of the possibility that all bicyclists would be barred from a bike free zone.

Regulating participant qualifications is also recommended for elimination because of uncertain outcomes. Based on analysis of NPS and EMS data, accident victims do not fall neatly into prescribed demographic pigeonholes. Instead, this issue should be left to the discretion of individual company owners.

Finally, the scenic byway proposal is not feasible and should be eliminated. Although the proposal has many attractive elements, designating a scenic byway requires the mobilization of resources that are outside County and State jurisdiction.

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8. References

American Association of State Highway and Transportation Officials (AASHTO). 1999. *Guide for the Development of Bicycle Facilities*.

County of Maui, Department of the Corporation Counsel. January 18, 2007. Letter to G. Riki Hokama, Council Chair, regarding Bill No. 84 (2006), Entitled "A Bill for an Ordinance Amending Chapter 5.22, Maui County Code, Relating to Bicycle Tour Business."

County of Maui, Department of Parks and Recreation. August 2006. Commercial Ocean Recreational Study. Prepared by Munekiyo & Hiraga, Inc.

County of Maui, Department of Planning. July 2004. Upcountry Greenway Master Plan.

County of Maui, Police Department. June 26, 2006. Letter to Joseph Pontanilla, Chair, Public Works and Transportation Committee, Maui County Council, regarding Downhill Bicycling Tours.

Federal Highway Administration. FHWQ-RD-98-095. *The Bicycle Compatibility Index: A Level of Service Concept, Implementation Manual*.

Kula Community Association. March 6, 2007. Bicycle Tour and Rental Safety Position Statement

State of Hawaii, Department of Transportation, Highways Division. September 2003. *Bike Plan Hawaii: A State of Hawaii Master Plan*.

U.S. Department of the Interior, National Park Service, February 27, 2008. *NPS Safety Analysis Report: Commercially Guided Bicycle Tours, Haleakala National Park*.

U.S. Department of the Interior, Haleakala National Park. *Commercial Downhill Bicycle Tours, Safety Stand-down, Management Analysis, Volume 1. 1999*.

U.S. Department of the Interior, Haleakala National Park. *Commercial Downhill Bicycle Tours, Safety Stand-down, Management Analysis, Volume 2. 2000*.

U.S. Department of the Interior, Haleakala National Park. *Commercial Downhill Bicycle Tours, Safety Stand-down, Management Analysis, Volume 3. 2001*.

U.S. Department of the Interior, Haleakala National Park. *Commercial Downhill Bicycle Tours, Safety Stand-down, Management Analysis, Volume 4. 2002*.

U.S. Department of the Interior, Haleakala National Park. *Commercial Downhill Bicycle Tours, Safety Stand-down, Management Analysis, Volume 5. 2003*.

U.S. Department of the Interior, Haleakala National Park. *Commercial Downhill Bicycle Tours, Safety Stand-down, Management Analysis, Volume 6. 2004*.

U.S. Department of the Interior, Haleakala National Park. *Commercial Downhill Bicycle Tours, Safety Stand-down, Management Analysis, Volume 7. 2005*.

U.S. Department of the Interior, Haleakala National Park. *Commercial Downhill Bicycle Tours, Safety Stand-down, Management Analysis, Volume 8. 2006*.

U.S. Department of the Interior, Haleakala National Park. *Commercial Downhill Bicycle Tours, Safety Stand-down, Management Analysis, Volume 9. 2007*.

U.S. Department of the Interior, Haleakala National Park. *Commercial Downhill Bicycle Tours, Safety Stand-down, Bike Company Input, Volume 10. 2007*.